L Number	Hits	Search Text	DB	Time stamp
1	2225	(milk or milking) and volume and assess$4 and somatic and parameter and regulat$5	USPAT; US-PGPUB	2003/11/19 14:05
2	72	(milk or milking) and volume and (assess$4 near10 parameter) and regulat$5 and (somatic adj cell)	USPAT; US-PGPUB	2003/11/19 14:07
3	148	(milk or milking) and volume and (assess$4 near10 parameter) and regulat$5 and particle and property	USPAT; US-PGPUB	2003/11/19 14:12
4	244	((milk or milking) near50 volume) and regulat$5 and particle and property	USPAT; US-PGPUB	2003/11/19 14:13
5	244	(((milk or milking) near50 volume) and regulat$5 and particle and property) not ((milk or milking) and volume and (assess$4 near10 parameter) and regulat$5 and particle and property)	USPAT; US-PGPUB	2003/11/19 14:28
6	295	milking adj process	USPAT; US-PGPUB	2003/11/19 14:30
7	22	(milking adj process) and regulate	USPAT; US-PGPUB	2003/11/19 14:29
8	334	milking adj process	EPO; JPO; DERWENT; IBM_TDB	2003/11/19 14:31
9	20	(milking adj process) and regulate	EPO; JPO; DERWENT; IBM_TDB	2003/11/19 14:31

Zeman, M.
09/830558

(FILE 'HCAPLUS' ENTERED AT 10:22:45 ON 19 NOV 2003)
L5 1233 SEA FILE=HCAPLUS ABB=ON PLU=ON MILK?(L)((BIOL? OR BIO)(3A)(PARTICLE OR SUBSTANCE OR MATERIAL) OR SOMATIC)
L6 33 SEA FILE=HCAPLUS ABB=ON PLU=ON L5(L)(VOL OR VOLUME)
L7 25 SEA FILE=HCAPLUS ABB=ON PLU=ON L6(L)(ASSESS? OR COUNT? OR QUANT? OR MEAS? OR CALCUL? OR CALC# OR DETERM? OR DET## OR PREDETERM? OR PREDET##)

L7 ANSWER 1 OF 25 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2003:828369 HCAPLUS
TITLE: The effect of rearing system of heifers on production and composition of milk during the first lactation
AUTHOR(S): Kisac, Peter; Broucek, Jan; Uhrincat, Michal; Mihina, Stefan; Hanus, Anton; Marencak, Stefan
CORPORATE SOURCE: Research Institute of Animal Production, Nitra, Slovakia
SOURCE: Agriculture (Bratislava, Slovakia) (2003), 49(1), 1-6
CODEN: ABSGCH
PUBLISHER: Publishing House NOI
DOCUMENT TYPE: Journal
LANGUAGE: Slovak
AB The aim of this study was to find out the effect of rearing method (natural and artificial calf rearing) and early weaning from mother on **milk** yield and composition of **milk** of heifers during the first lactation. At the first day of live 57 Holstein heifers were divided into five groups with different method of rearing: a - from second to seventh day in a hutch, then in loose housing with drinking feeder until weaning b - hutch from the second day until weaning c - pen with mother until the seventh day, then with nursing cows until weaning d - pen with mother until the seventh day, then hutch until weaning e - pen with mother until the seventh day, then in loose housing with drinking feeder until weaning. During the first lactation **milk** yield control was made once in a week, **milk** composition two-times in a month. There was valued 305-day **milk** yield. Results were valued by program Statistix and differences between groups by Tukey test. The highest **milk** yield in norm lactation (6894 kg) had heifers reared by nursing cow (group c), the lowest one (5758 kg) heifers reared the first week of live in the hutch and then by drinking feeder (group a). Difference between c and a was significant. Significant difference was in **volume** of **milk** fat between groups a and b (heifers reared in the hutch from the second day of live), the most fat was found out in **milk** of group a (4.10%) and the least in **milk** of group b (3.57%). In production of **milk** protein was significant difference between groups d (pen with mother until the seventh day, then hutch until weaning) and c (194.1 a 215.3 kg) and high significant difference between groups e and a (180.9 kg). Significant differences were between groups c and a in production of lactose (342.9 and 285.0 kg) of nitrogen-free substances (608.0 and 513.3 kg) and in **volume** of **milk** solids (12.41 a 13.14%). In **somatic** cells **count** were not significant differences between groups.

L7 ANSWER 2 OF 25 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2003:581973 HCAPLUS

DOCUMENT NUMBER: 139:322452
TITLE: Determination of chlorine, bromine and iodine in milk samples by ICP-OES
AUTHOR(S): Naozuka, Juliana; Mesquita Silva da Veiga, Marcia A.; Vitoriano Oliveira, Pedro; de Oliveira, Elisabeth
CORPORATE SOURCE: Instituto de Quimica, Universidade de Sao Paulo, Sao Paulo, 05513-970, Brazil
SOURCE: Journal of Analytical Atomic Spectrometry (2003), 18(8), 917-921
CODEN: JASPE2; ISSN: 0267-9477
PUBLISHER: Royal Society of Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A procedure coupling acid decomposition and precipitation, using inductively coupled plasma optical emission spectrometry (ICP- OES) is proposed for the **determination** of Cl, Br and I in **milk** samples. During the mineralization process in closed and open vessels (microwave ovens), anions are precipitated as salts of low solubility products (AgCl, AgBr and AgI). After separation from digestate solution, ppts. are dissolved with ammonia resulting in a 20% **volume/vol** . solution The final solution was directly introduced into the ICP-OES without any damage to the sample introduction system and with no severe spectral interference. Three **biol.** reference **materials** were used to validate the methodol.: Non-Fat **Milk** Powder SRM 1549 from NIST, Skim **Milk** Powder RM-151 from BCR and Whole Egg Powder RM 8415, also from NIST. The limits of detection (3σb/s) for Cl, Br and I in the solid sample were 30, 40 and 280 μg/g for the closed vessel microwave oven, and 15, 20 and 40 μg/g for the open vessel microwave oven, resp. Relative standard deviations, considering five replicates of sample submitted to the proposed methodol., were 1% for Cl and Br, and 2% for I, when a closed vessel microwave was used. The results for Cl were in good agreement with the certified values (90% confidence level). For Br, recoveries ranged from 87 to 104% for closed vessel microwave oven and from 90 to 102% for open vessel microwave oven. As for I, recoveries ranged from 85 to 98% with a closed vessel microwave oven. Accurate results for **detns.** in certified materials and good recoveries demonstrated the efficiency of the procedure.

REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 3 OF 25 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2003:530865 HCAPLUS
TITLE: Effect of omitting one milking weekly on lactational performances and morphological udder changes in dairy cows
AUTHOR(S): Ayadi, M.; Caja, G.; Such, X.; Knight, C. H.
CORPORATE SOURCE: Unitat de Produccio Animal, Department of Animal and Food Sciences, Universitat Autonoma de Barcelona, Bellaterra, 08193, Spain
SOURCE: Journal of Dairy Science (2003), 86(7), 2352-2358
CODEN: JDSCAE; ISSN: 0022-0302
PUBLISHER: American Dairy Science Association

DOCUMENT TYPE: Journal
LANGUAGE: English

AB The response of dairy cows to omitting one **milking** weekly was investigated in two successive expts. conducted with Holstein cows **milked** twice daily. Experiment 1 compared the lactational performances and udder changes in eight cows (31.2 L/d, 201 d in **milk**) in the 5 wk before and the 5 wk after introducing the suppression of one **milking** weekly. **Milk** yield was recorded daily and **milk** composition twice weekly. **Milk** partitioning in the udder (alveolar and cisternal **milk**) and cisternal size (ultrasonog.), 8 h after **milking**, were also **measured** at the start and the end of the experiment Although daily **milk** yield decreased 32% during the experiment (10 wk), linear regression anal. revealed a loss of **milk** yield of 1.1 L/d (3.7%) as a consequence of the omission of one **milking** weekly. **Milk** composition, lactation persistency, and **somatic** cell **count** (SCC) were unaffected by **milking** omission. **Milk** partitioning in the udder decreased by 38% in alveolar **milk volume** and showed a tendency to decrease in cisternal **milk volume** (15%) and cisternal size (7%), as a result of **milking** omission and advancing lactation. Loss in total **milk** yield was neg. related with cisternal **milk volume** (r = -0.77) and cisternal size (r = -0.70) indicating smaller losses in the udders with large cisterns. In Experiment 2, five cows (21.0 L/d, 227 d in **milk**) previously adapted to the **milking** omission schedule were used to study the daily effects of **milking** omission on **milk** yield, **milk** composition and udder health during 10 wk. **Milk** yield and **milk** composition were approx. constant but SCC increased with lactation stage. The omission of one **milking** caused an important decrease in **milk** yield, fat content and SCC on the omission day and a compensatory increase over the following 2 d, but **milk** protein and lactose did not vary. All variables reached the average weekly value three days after the **milking** omission (six **milkings**). In conclusion, under the conditions used, omitting one **milking** weekly slightly reduced **milk** yield and did not affect **milk** composition when healthy cows were used. **Milk** losses by **milking** omission depend on udder cistern characteristics; evaluating cistern size by ultrasonog. may be a useful tool for choosing cows that are better adapted to a reduced **milking** frequency.

REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 4 OF 25 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2003:218962 HCAPLUS
TITLE: Differential leukocyte count method for bovine low somatic cell count milk
AUTHOR(S): Dosogne, H.; Vangroenweghe, F.; Mehrzad, J.; Massart-Leen, A. M.; Burvenich, C.
CORPORATE SOURCE: Faculty of Veterinary Medicine, Department of Physiology, Biochemistry and Biometrics, Ghent University, Merelbeke, 9820, Belg.
SOURCE: Journal of Dairy Science (2003), 86(3), 828-834
CODEN: JDSCAE; ISSN: 0022-0302

PUBLISHER: American Dairy Science Association
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Whereas many differential leukocyte **count** methods for high **somatic** cell **count** (SCC) **milk** from mastitic cows are available, only a few have been developed for low SCC **milk**. We have developed a flow cytometric differential leukocyte **count** method for low SCC **milk**. The procedure consists of 1) 1.5 mL of diluted **milk** sample (30%, **vol/vol** dilution with PBS), 2) centrifugation, 3) leukocyte labeling with SYTO 13 and 4) flow cytometric anal. Four major leukocyte populations can be clearly identified in the green fluorescence-side scatter dot plot: lymphocytes and monocytes (LM), polymorphonuclear neutrophils (PMN), mature macrophages (MΦ), and cells with apoptotic features based on chromatin condensation and nuclear fragmentation. The optimal processing temperature was 20°C. Significant differences among samples with similar differential leukocyte **counts** were found. Storage of **milk** samples during 2 d at 7°C had no effect on differential leukocyte **count**. Using the new method, differential leukocyte **count** was performed in low SCC **milk** samples from cows in early, mid, and late lactation. In accordance with previous studies, PMN and MΦ percentages were lower and LM percentages were higher in early lactation than in the other stages of lactation. The percentage of cells with apoptotic features was higher in early lactation than in mid and late lactation. In conclusion, a rapid, simple, accurate, and reproducible standard procedure was developed to **determine** the differential leukocyte **count** (MΦ, PMN, LM, and cells with apoptotic features) of bovine low SCC **milk**.
REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 5 OF 25 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2002:209831 HCAPLUS
TITLE: Influence of estrus on somatic cell count in dairy goats
AUTHOR(S): McDougall, S.; Voermans, M.
CORPORATE SOURCE: Animal Health Centre, Morrinsville, N. Z.
SOURCE: Journal of Dairy Science (2002), 85(2), 378-383
CODEN: JDSCAE; ISSN: 0022-0302
PUBLISHER: American Dairy Science Association
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The effect of estrus on the **somatic** cell **count** (SCC) of goat's **milk** was examined by inducing estrus in 24 of 48 seasonally anestrus, lactating dairy goats. Goats were blocked by infection status and ranked on SCC from three preceding herd tests and randomly allocated (within block) to the following three treatment groups: a) "Short," in which an intravaginal progesterone-releasing device was inserted for 12 d plus equine chorionic gonadotropin and dinoprost tromethamine 2 d before device removal (n = 12), b) "Long," in which an intravaginal progesterone-releasing was inserted for 17 d plus equine chorionic gonadotropin on the day of device removal (n = 12), or c) "Control," in which the goats were left as untreated controls (n = 24). Bacteriol. status of each gland of each goat was **determined**

before and after synchronization (d -23 and +13) and SCC and **milk vols.** were **determined** on d -2, 0, 1, 2, 3, 4, 14, and 25, where d 0 was the day of intravaginal device removal. Goats in the Short group were in estrus before those of the Long group, who were, in turn, in estrus before the Control group. The log10 and log10 absolute SCC (SCC cells/mL + **volume**) were higher in the Short than in the Control group on d 1, 2, 3, and 4, whereas those of the Long group were higher than those of the Control group on d 2 and 4. These data indicate that estrus resulted in an increase in SCC, and that the increase in SCC was independent of the decline in **milk volume** at estrus.

REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 6 OF 25 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2002:87970 HCAPLUS
DOCUMENT NUMBER: 136:262190
TITLE: Airspace effects on the yield and quality of ewe milk
AUTHOR(S): Sevi, A.; Taibi, L.; Albenzio, M.; Annicchiarico, G.; Muscio, A.
CORPORATE SOURCE: Instituto di Produzioni e Preparazioni Alimentari, Facolta di Agraria, Foggia, 71100, Italy
SOURCE: Journal of Dairy Science (2001), 84(12), 2632-2640
CODEN: JDSCAE; ISSN: 0022-0302
PUBLISHER: American Dairy Science Association
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Three groups of 12 midlactating Comisana ewes were housed in sep. rooms of the same building and assigned to treatments of low (LV, 4.1 m3), medium (MV, 5.6 m3), or high (HV, 7.3 m3) airspace/animal. The concns. of airborne microorganisms in the exptl. rooms were **measured** twice weekly at 0930 and 1630. Ewe **milk** yield was recorded daily. Individual **milk** samples were analyzed weekly for **milk** composition, coagulating properties, **somatic** cell concentration (SCC), and polymorphonuclear neutrophil leukocyte **count** (PMNLC), and fortnightly for bacteriol. characteristics; samples with more than 106 **somatic** cells/mL were cultured for mastitis-related pathogens. The LV and MV treatments resulted in higher relative humidity and air concns. of staphylococci than the HV treatment. Greater amts. of air mesophilic bacteria were also found in the LV than in the HV room. Ewes in the HV group gave greater yields of **milk** than those in the LV and MV groups. LV **milk** also had a lower casein content than HV **milk**. Significant interactions of treatment time were found for **milk** protein and fat content as well as for clotting time and clot firmness, with LV **milk** having the poorest composition and deteriorated renneting ability during the last 3 wk of the trial. Results suggest that airspace is a critical factor in dairy sheep housing and indicate that a **volume** allocation of less than 7 m3/animal may adversely affect the performance and health of the lactating ewe.

REFERENCE COUNT: 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE

IN THE RE FORMAT

L7 ANSWER 7 OF 25 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2001:249018 HCAPLUS
DOCUMENT NUMBER: 135:302537
TITLE: Using egg antibodies to treat diseases
AUTHOR(S): Coleman, M.
CORPORATE SOURCE: MAC Associates, Columbus, OH, USA
SOURCE: Egg Nutrition and Biotechnology, [International Egg Symposium], 2nd, Banff, AB, Canada, Apr. 5-8, 1998 (2000), Meeting Date 1998, 351-370. Editor(s): Sim, Jeong S.; Nakai, Shuryo; Guenter, Wilhelm. CABI Publishing: Wallingford, UK.
CODEN: 69BCX3
DOCUMENT TYPE: Conference
LANGUAGE: English

AB The human immunodeficiency virus (HIV) is a time bomb ready to explode within 7-10 yr into a full blown case of acquired immune deficiency syndrome (AIDS). Frequently, AIDS, transplant, burn, cancer patients and other immune-suppressed individuals die from infections of pathogens which almost every person has in their normal gut flora. Specially produced eggs can replace the immunity lost by these diseases, while in many cases they may ameliorate the effects of the diseases themselves. Antibodies are different from antibiotics. They work by chelating antigens, thereby not allowing resistance to develop. Chickens are one of the best antibody producers in the world. They lay a 'golden egg' filled with antibodies almost every day. This study was performed to **determine** if feeding antibodies could reduce the **somatic** cell **count** (SCC). The SCC was **measured** every 3 days for 3 wk pre-trial (125 cows). Cows with an SCC of 250,000-750,000 were treated with egg antibodies raised against Staphylococcus aureus and Streptococcus agilata at 0 (control), 50, 100 and 200 p.p.m. in their feed. Complete blood **counts** and **milk** samples were taken every third day for 9 wk. **Milk** (a.m. and p.m.) was tested for **volume**, fat, protein, solids not fats (SNF) and SCC. Cultures were taken from the teats of cows exhibiting > 1,000,000 SCC and from the teats of all cows 6 wk post-trial. Microorganisms were compared in 492/481 cows with a high SCC (> 1,000,000) before and after the experiment Treated cows were protected from Staphylococcus/Streptococcus, but not from other mastitis-causing agents. SCCs were decreased (-44% P < 0.05) for at least 3 wk post-trial (control +72%). **Milk** (p.m.) production (+9%), protein (+9%) and SNF (+2%) content increased (P < 0.05). Staphylococcus/Streptococcus were found in 56 and 57% resp. of the high SCC cows before and after this experiment, but no treated cows exhibiting high SCC cultured pos. for Staphylococcus or Streptococcus. There were no significant differences in complete blood **counts**. This suggests that orally fed antibodies can be effective in tissues remote from the intestines.

REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 8 OF 25 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2000:460979 HCAPLUS
DOCUMENT NUMBER: 133:247398

TITLE: Hormonal induced lactation in transgenic goats
AUTHOR(S): Cammuso, C.; Porter, C.; Nims, S.; Gaucher, D.; Melican, D.; Bombard, S.; Hawkins, N.; O'Coin, A.; Ricci, C.; Brayman, C.; Buzzell, N.; Ziomek, C.; Gavin, W.
CORPORATE SOURCE: Genzyme Transgenics Corporation, Framingham, MA, 01702, USA
SOURCE: Animal Biotechnology (2000), 11(1), 1-17
CODEN: ANBTEN; ISSN: 1049-5398
PUBLISHER: Marcel Dekker, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The aim of this study was to hormonally induce lactation in prepubertal, nulliparous, and male goats both transgenic and non-transgenic. Anal. of **milk** quality, recombinant protein expression levels, total amount of recombinant protein produced, and the affect on long-term reproductive capability was **assessed.** Fifty-one goats (Saanen, Alpine, and Toggenburg), male and non-pregnant females, 2-31 mo of age, either non-transgenic or transgenic were evaluated with a total of 10 transgenes (constructs) represented. Animals were given estradiol (0.25 mg/kg, IM) and progesterone (0.75 mg/kg, IM) on days 1, 3, 5, 7, 9, 11 and 13, while prednisolone (0.4 mg/kg, IM) was administered on days 14-16 with mammary massage occurring daily from day 5 onward. Forty of 51 animals, (36 of 38 females and 4 of 13 males) produced **milk** with total **vols.** in the 30-day experiment, ranging from 20 μl to 530 mls per day, or approx. 500 μl to 6.8 L total. **Milk** composition was analyzed for various parameters (total protein, fat content, total solids and **somatic** cell **count**) with no significant differences found between induced and natural **milk.** Expression levels of recombinant proteins from transgenic animals that were analyzed during the induced lactation, and subsequently during normal lactations, were found to have no significant differences. Total amount of recombinant protein produced was evaluated at different expression levels with no statistical significance seen. While over 90% of the females placed in the regimen became pregnant, there was a correlation between increased age at time of induction and an increase in number of breedings, or reproductive cycles needed to establish a pregnancy after induction. For males, 100% placed in the regimen settled females after hormonal induction of lactation. Semen quality was evaluated prior to, during, and after hormonal treatments. Semen **volume** and sperm number did not differ; however, for a small percentage of males, there was a decrease in sperm and post thaw motility after hormonal treatments. These levels returned to normal within 4-5 wk. Subsequent natural lactations showed total **milk vols.** within breed stds. These findings indicate that hormonal induction of lactation in the caprine species is a viable alternative to pregnancy for initiating lactation and **milk** production, does not adversely impact reproductive performance long-term, and can benefit the early **assessment** of recombinant proteins produced in a transgenic founder program.

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 9 OF 25 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2000:443319 HCAPLUS

TITLE: Somatic cells and electrical conductivity in relation to milking frequency
AUTHOR(S): Hamann, J.; Gyodi, P.
CORPORATE SOURCE: Department of Hygiene and Technology of Milk, School of Veterinary Medicine, Hannover, 30173, Germany
SOURCE: Milchwissenschaft (2000), 55(6), 303-307
CODEN: MILCAD; ISSN: 0026-3788
PUBLISHER: VV-GmbH Volkswirtschaftlicher Verlag
DOCUMENT TYPE: Journal
LANGUAGE: English

AB **Somatic** cells and elec. conductivity were **measured** in quarter **milk** fractions of 16 healthy quarters (4 cows) throughout 12 days during which 4 **milkings** were applied (at: 6 a.m.; 10 a.m.; 2 p.m.; 6 p.m.) to evaluate the influence of varying **milking** intervals on both inflammatory parameters. The **milking** intervals were 4 h during the day and 12 h over-night. The mean daily yield per cow was stable throughout the study. The following **milk** fractions were used: the first **milk** jets (FIM), the following 15 mL of **milk** (FOM), residual **milk** (MSM) and quarter composite samples (QCM). The general trend of changes was identical in all types of **milk** fractions. **Milking** intervals of 4 h resulted in a significant increase of SCC and elec. conductivity The values of both parameters were identical at all 3 **milkings** after an interval of 4 h. After the 12 h interval at morning **milking** during the treatment period the SCC was significantly reduced while the elec. conductivity was significantly increased compared to the values after the identical interval during the control periods with twice daily **milking** at 12 h intervals. The **milking** regime applied caused an increase in cell influx to the **milk** of approx. 16% over 24 h compared to the control periods despite the fact that the **milk** yields were unchanged during the study. Obviously, mechanisms not related to the **volume** of **milk** yield secreted over 24 h are involved in the regulation of **milk** composition

REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 10 OF 25 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1999:529334 HCAPLUS
DOCUMENT NUMBER: 131:127382
TITLE: Somatic cell analyzer
INVENTOR(S): Mangan, Steven L.
PATENT ASSIGNEE(S): Agricultural Instruments Canada Ltd., Can.
SOURCE: PCT Int. Appl., 35 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9941605	A1	19990819	WO 1999-CA130	19990212

W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS,

JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG,
MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK,
SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG,
KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK,
ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF,
CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

US 6031367	A	20000229	US 1998-24569	19980217	
AU 9925075	A1	19990830	AU 1999-25075	19990212	
AU 726618	B2	20001116			
EP 975960	A2	20000202	EP 1999-904662	19990212	
EP 975960	B1	20020925			
R: AT, BE, CH, DE, DK, ES, FR, GB, IT, LI, NL, SE					
NZ 338045	A	20010629	NZ 1999-338045	19990212	
AT 225038	E	20021015	AT 1999-904662	19990212	
MX 9909199	A	20000630	MX 1999-9199	19991007	
US 6307362	B1	20011023	US 1999-457969	19991209	

PRIORITY APPLN. INFO.:

CA 1998-2229354	A	19980213
US 1998-24569	A1	19980217
WO 1999-CA130	W	19990212

AB An online **somatic** cell analyzer and a method for **measuring** a **somatic** cell **count** (SCC) are provided. A flow cell is connected to a **milking** hose and admits a constant **volume** of sampled **milk** into the flow chamber. A probe with two electrodes is positioned in a zone of optimal sensing inside the flow chamber, and provides a modulated signal according to the number of sodium ions present in the sample. A control unit receives the modulated signal, generates an ion **count**, and compares same with a plurality of SCC thresholds for classifying the sample in a quality category. A set of parameters characterizing the resp. quality category, as well as the presence of mastitis in the animal, are finally displayed.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 11 OF 25 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1999:399866 HCAPLUS
TITLE: Effect of milking frequency and pasture intake on milk yield and composition of late lactation cows
AUTHOR(S): Lacy-Hulbert, S. J.; Woolford, M. W.; Nicholas, G. D.; Prosser, C. G.; Stelwagen, K.
CORPORATE SOURCE: Ruakura Research Centre, Dairying Research Corporation Ltd., Hamilton, Neth.
SOURCE: Journal of Dairy Science (1999), 82(6), 1232-1239
CODEN: JDSCAE; ISSN: 0022-0302
PUBLISHER: American Dairy Science Association
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Twenty-four monozygous twinsets in late lactation (>210 d in **milk**) were used to examine the effects of feed restriction and **milking** frequency prior to drying off on **milk** yield and composition in a pastoral dairying system. Cows were assigned to one of four treatment groups for 26 d and were **milked** either twice or once daily and given either unrestricted or restricted access to feed. Dry matter intakes averaged 16 or 8 kg

per cow per day, and diets comprised ryegrass and white clover pasture supplemented with 15% pasture silage. Feed restriction and once daily **milking** reduced **milk** yield and increased concns. of **milk** fat and protein. **Somatic** cell **count** was increased by feed restriction only. Production losses caused by feed restriction were nearly threefold higher than were those for once daily **milking**. Yields of components that were mammary synthesized and serum derived were reduced by feed restriction, in accordance with **milk volume** reduction Plasma lactose concentration increased with once daily **milking** only and indicated enhanced permeability of mammary tight junctions. Both feed restriction and once daily **milking** compromised **milk** quality, but increased leakage of serum components into **milk** via mammary tight junctions was deemed to occur only for once daily **milking**.

REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 12 OF 25 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1999:201071 HCAPLUS
DOCUMENT NUMBER: 131:18340
TITLE: Effect of administration of vitamin E and selenium during the dry period on mammary health and milk cell counts in dairy ewes
AUTHOR(S): Morgante, M.; Beghelli, D.; Pauselli, M.; Dall'Ara, P.; Capuccella, M.; Ranucci, S.
CORPORATE SOURCE: Istituto di Semeiotica Medica e Metodologia Clinica Veterinaria, Perugia, 06126, Italy
SOURCE: Journal of Dairy Science (1999), 82(3), 623-631 CODEN: JDSCAE; ISSN: 0022-0302
PUBLISHER: American Dairy Science Association
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The effect of parenteral administration of two s.c. injections of vitamin E and Se (5 mg and 0.1 mg/kg of body weight, resp.) during the dry period on the mammary health and **milk somatic** cell **counts** of 25 dairy ewes was investigated. Supplementation reduced **somatic** cell **counts** (5.4 vs. 6.0 log10) during the subsequent lactation but had no effect on the incidence of clin. mastitis (4% vs. 6%) and intramammary infections (9.0% vs. 11.3%). Furthermore, the administration of vitamin E and Se was associated with differences in differential cell **counts** of **milk** samples (macrophages, 48.8% vs. 38.4%; polymorphonuclear neutrophils, 40.1% vs. 50.7%; and eosinophils, 0.7% vs. 1.4% for control ewes and ewes receiving supplements, resp.). The administration of these supplements also increased erythrocyte glutathione peroxidase activity (139.5 vs. 86.3 U/mL of packed cell **volume**) and the percentage of blood neutrophils that reduced nitroblue tetrazolium after bacterial extract stimulation (48.6% vs. 38.7%). Parenteral administration of vitamin E and Se to ewes during the dry period appeared to have influenced mammary gland status during the subsequent lactation and particularly total and differential **milk** cell **counts**.

REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE

IN THE RE FORMAT

L7 ANSWER 13 OF 25 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1998:347992 HCAPLUS
TITLE: Effects of mastitis on the volume and composition of colostrum produced by holstein cows
AUTHOR(S): Maunsell, F. P.; Morin, D. E.; Constable, P. D.; Hurley, W. L.; Mccoy, G. C.; Kakoma, I.; Isaacson, R. E.
CORPORATE SOURCE: Department of Veterinary Clinical Medicine, University of Illinois, Urbana, 61802, USA
SOURCE: Journal of Dairy Science (1998), 81(5), 1291-1299
CODEN: JDSCAE; ISSN: 0022-0302
PUBLISHER: American Dairy Science Association
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The effects of mastitis during the late nonlactating period on colostral **volume** and concns. and total yields of Ig (Ig) G1, fat, and protein in colostrum were investigated using matched pairs of mammary glands from multiparous Holstein cows. Samples of mammary secretions were collected at approx. 14 and 7 d prepartum and within 3 h after calving. At each sampling time, the glands and secretions were examined for gross abnormalities, and the California Mastitis Test was performed. Duplicate secretion samples from each gland were cultured, and **somatic** cell **count**, pH, and fat and protein concns. were **determined** The **volume** of colostrum obtained at the first **milking** of each gland was **quantified** using a quarter **milking** device, and its IgG1 concentration was **measured**. Colostral **vol** . from persistently infected mammary glands was lower than that from matched uninfected glands, as was the total mass of IgG1. However, infection did not alter IgG1 concentration in colostrum. Fat and protein percentages were lower in prepartum secretions but not in colostrum from infected glands. Persistent infection was associated with increased **somatic** cell **count** and pH of secretions at all sampling times, and California Mastitis Test scores were higher for colostrum from infected glands. The appearance of secretions was extremely variable, but the presence of flakes or clots in colostrum was associated with infection. We concluded that mastitis during the late nonlactating period alters mammary gland function but is unlikely to be an important contributor to the high rate of failure of passive transfer of Igs in calves.
REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 14 OF 25 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1995:292137 HCAPLUS
DOCUMENT NUMBER: 122:79883
TITLE: The effect of intra-ruminal selenium pellets on growth rate, lactation and reproductive efficiency in dairy cattle
AUTHOR(S): Wichtel, J. J.; Craigie, A. L.; Varela-Alvarez, H.; Williamson, N. B.
CORPORATE SOURCE: Department Veterinary Clinical Sciences, Massey

University, Palmerston North, N. Z.
SOURCE: New Zealand Veterinary Journal (1994), 42(6), 205-10
CODEN: NEZTAF; ISSN: 0048-0169
DOCUMENT TYPE: Journal
LANGUAGE: English

AB In each of two dairy herds (A and B), rising yearling heifers (Trial 1) and adult cows (Trial 2) were assigned to three treatment groups. Untreated animals were compared to animals treated with either two or four intra-ruminal pellets containing 3 g of elemental selenium. The administration of pellets at the recommended dose (two pellets per animal) was effective in elevating whole blood glutathione peroxidase activity and selenium concentration to over 10 times those of control animals. In Trial 1, a 15% response in liver weight gain occurred in yearling heifers in the herd with the lowest pre-treatment selenium status. In Trial 2, cows receiving two pellets produced a greater **milk volume** and more **milk** solids than untreated controls; an increase in **volume** of 5.4% and 8%, and in **milk** solids of 6.5% and 6.4%, were noted in herds A and B resp. There was a trend towards decreasing **somatic** cell **counts** in **milk** from the treated cows when compared to controls, the four-pellet group in Herd A and the two-pellet group in Herd B being significantly different from their resp. control group. No between-group differences were noted in calving-first service or calving-conception intervals, nor in the proportion of animals pregnant to first or all services. The administration of selenium at twice the recommended dose rate yielded no addnl. response above that noted after the administration of the recommended dose. The results of this study support the use of currently recommended Ministry of Agriculture and Fisheries selenium reference ranges in cattle for the prediction of a response to supplementation.

L7 ANSWER 15 OF 25 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1994:190219 HCAPLUS
DOCUMENT NUMBER: 120:190219
TITLE: Shelf-stable milk calibration standards.
INVENTOR(S): Turner, Jeffrey D.
PATENT ASSIGNEE(S): Flockton Analytical Management Inc., Can.
SOURCE: U.S., 7 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5288642	A	19940222	US 1992-987825	19921209
CA 2110953	AA	19940610	CA 1993-2110953	19931208

PRIORITY APPLN. INFO.: US 1992-987825 19921209

AB A calibration standard for machines which **count** the **somatic** cells in a **milk** sample, comprises an aqueous dispersion of microbeads bearing a fluorescent dye, a suspending agent, and an electrolyte, such as NaCl . The dye, such as Fluoresbrite, has an excitation wavelength <580 nm and a fluorescence emission wavelength of 550-660 nm, with the excitation wavelength being ≥10 nm below the emission wavelength. The

microbeads are present in a **predetd.** number per unit **volume** of dispersion; typically the standard contains 1 + 105 to 9 + 105 beads/mL.

L7 ANSWER 16 OF 25 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1993:211532 HCAPLUS
DOCUMENT NUMBER: 118:211532
TITLE: Automated technique for sampling milk from farm bulk tanks: collaborative study
AUTHOR(S): Packard, Vernal S.; Ginn, Roy E.; Metzger, Dick T.
CORPORATE SOURCE: Dep. Food Sci. Nutr., Univ. Minnesota, St. Paul, MN, 55108, USA
SOURCE: Journal of AOAC International (1993), 76(2), 297-305
CODEN: JAINEE; ISSN: 1060-3271
DOCUMENT TYPE: Journal
LANGUAGE: English
AB An automated, in-line, mech. technique for sampling **milk** from farm bulk tanks was evaluated in a collaborative study. The automated sampling device, which is mounted on the **milk** intake line, contains an electronically controlled peristaltic pump. The device takes a representative sample of the entire **vol**. pumped through the system. Samples taken can be analyzed for both composition and microbiol. quality. The study was performed in 3 phases. In the first 2 phases, samples taken by manual and automated methods were compared in analyses for **somatic** cell **count**, antibiotics, fat, protein, lactose, and solids-not-fat. The third phase, using a modified procedure, was designed to compare sampling methods in analyses for total bacteria **count** (standard plate **count**), psychrotrophic bacteria **count**, and coliform **count**. Evaluation of the data by a nested ANOVA indicated no difference between results for samples taken by the automated and manual methods in Phases 1 and 2, irresp. of whether the bulk **milk** was agitated before sampling. By introducing a sanitizing step between farms in Phase 3, the automated method also provided samples comparable with those taken manually for microbial analyses. The automated method has been adopted first action by AOAC International.

L7 ANSWER 17 OF 25 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1991:625591 HCAPLUS
DOCUMENT NUMBER: 115:225591
TITLE: Identification of saliva stains by determination of the specific activity of amylase
AUTHOR(S): Tsutsumi, Hajime; Higashide, Koji; Mizuno, Yasushi; Tamaki, Keiji; Katsumata, Yoshinao
CORPORATE SOURCE: Chim. Sci. Lab., Aichi Prefect. Police Headquarters, Nagoya, 460, Japan
SOURCE: Forensic Science International (1991), 50(1), 37-42
CODEN: FSINDR; ISSN: 0379-0738
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The specific activity (enzyme activity/protein concentration) of amylase was **determined** for the identification of saliva stains. The specific activity of amylase in saliva stains rapidly decreased during the 1st hour but, from 1 to 28 days, this decrease was much

less when the stains were kept at room temperature Stains of various human **biol. materials**, breast **milk**, nasal secretion, meconium, and vaginal secretion showed comparatively high amylase activity, but the saliva stains could be differentiated by their high specific activity of amylase, over 2 IU/mg. When saliva stains were contaminated with blood or vaginal secretions at various ratios, the specific activity of amylase decreased with increase in the ratio of contaminant, especially when the contaminant was blood. However, the specific activity of amylase was still higher than 2 IU/mg even after 1/5 **volume** of blood was added after 5 **vols.** of the extract of the stains of vaginal secretions were added.

L7 ANSWER 18 OF 25 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1991:549944 HCAPLUS
DOCUMENT NUMBER: 115:149944
TITLE: The combined use of lipoxygenase and cyclooxygenase inhibitors in Klebsiella pneumoniae-induced bovine mastitis
AUTHOR(S): Rose, D. M.; Giri, S. N.; Cullor, J. S.; Bushnell, R. B.
CORPORATE SOURCE: Sch. Vet. Med., Univ. California, Davis, CA, 95616, USA
SOURCE: Journal of Veterinary Medicine, Series A (1991), 38(2), 99-106
CODEN: JVMAE6; ISSN: 0931-184X
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The effect of combined administration of flunixin meglumine (FM) and nordihydroguaiaretic acid (NDGA) on **milk** prostaglandin F2α (PGF2α) and leukotriene B4 (LTB4) concns. and inflammatory indicators of bovine mastitis was examined Mastitis was induced in six Holstein cows by the inoculation of Klebsiella pneumoniae via the teat canal. Four cows were i.v. treated with FM (1.1 mg/kg) and NDGA (10 mg/kg) 1 h prior to bacterial inoculation and again at post inoculation hour (PIH) 11. Two control cows were i.v. treated with equivalent **volume** doses of sterile isotonic saline solution at the same post inoculation time points. Combined use of FM and NDGA was effective in reducing elevations in **milk** PGF2α levels and slightly effective in reducing elevations in **milk** LTB4 levels in the mastitic cows. Elevations in **milk** bovine serum albumin (BSA) levels were partially reduced during the early post inoculation time period in the FM and NDGA treated cows as compared to the saline treated control cows. **Milk somatic** cell **counts** from inoculated quarters were not significantly altered by FM and NDGA treatment. Elevations in rectal temperature were not reduced by FM and NDGA treatment, but clin. signs of quarter inflammation (warmth and swelling) were reduced by FM and NDGA treatment.

L7 ANSWER 19 OF 25 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1986:605601 HCAPLUS
DOCUMENT NUMBER: 105:205601
TITLE: Extraction and determination of adenosine 5'-triphosphate in bovine milk by the firefly luciferase assay
AUTHOR(S): Olsson, Thomas; Sandstedt, Karin; Holmberg, Olof; Thore, Anders

CORPORATE SOURCE: Natl. Vet. Inst., Uppsala, S-750 07, Swed.
SOURCE: Biotechnology and Applied Biochemistry (1986), 8(5), 361-9
CODEN: BABIEC; ISSN: 0885-4513
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The release of ATP from **somatic** cells in **milk** with the detergent Triton X 100 was optimized for assay with firefly luciferase. A small **volume** of **milk** (40 μL) was added to 0.8 mL of 0.2% Triton X 100 in 100 mM Tris, 4 mM EDTA, pH 7.8. After .apprx.1 min, 0.2 mL of luciferase reagent was added and the emission of light was **measured** in a luminometer. Results were calibrated with an ATP standard This simple method gave high yields of ATP from **somatic** cells in **milk** without interference from bacterial ATP. Exts. could be stored or transported prior to assay without deterioration of results. A close correlation was found between **somatic** cell **count** and ATP in **milk** samples collected at a farm as well as in **milk** samples from a cow with exptl. mastitis. Results are promising for future use for diagnosis of mastitis but further work and field testing has to be done before it can be used on a wider scale.

L7 ANSWER 20 OF 25 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1983:609143 HCAPLUS
DOCUMENT NUMBER: 99:209143
TITLE: Determination of carbohydrates using the Teles reagent. I. Methodological considerations
AUTHOR(S): Nikolic, J. Anna
CORPORATE SOURCE: Dep. Endocrinol. Immunol. Nutr., INEP, Zemun, 11080, Yugoslavia
SOURCE: Acta Veterinaria (Belgrade) (1983), 33(2-3), 149-56
CODEN: ACVTA8; ISSN: 0567-8315
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Comparative **detns**. of a series of carbohydrates (pentose, aldo- and keto-hexoses, reducing and non-reducing disaccharides, polysaccharides), monosaccharide derivs. and possible interfering compds. were done by using the Teles reagent, which consists of a mixture of phenol, NaOH, picric acid and sodium metabisulfite. After treatment with the Somogyi reagent, solns. of sugars are boiled with the Teles reagent, cooled, diluted to **volume** and the absorbance **determined** spectrophotometrically. A linear response to increasing sugar concns. was obtained. Moreover, equal masses of pentoses and hexoses produced very similar amts. of color so that the total amount of monosaccharide may be **determination** in a mixture and expressed as mass of glucose. Sucrose after weak acid hydrolysis, starch after enzymic hydrolysis with amyloglucosidase and galacturonic acid gave the expected results in terms of hexose equivs. The results for inulin and glucosamine were somewhat lower (94 and 87% on a mass basis resp.), maltose and lactose can be estimated accurately only if they are the only sugar present (as in **milk**) using the appropriate standard or after weak hydrolysis together with the monosaccharides. The characteristics of the results obtained show that the reactions involved are similar to those described in the literature for the Sumner method which uses dinitrosalicylic acid instead of picric acid. Cysteine, uracil,

salicylic acid and lactic acid did not react under the conditions used, while interference from ascorbic acid and phenols such as α-naphthol should be slight in most **biol. materials** to be examined Creatinine may interfere seriously.

L7 ANSWER 21 OF 25 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1982:454220 HCAPLUS
DOCUMENT NUMBER: 97:54220
TITLE: Variation of pyruvate and ammonia contents in raw milk from individual animals to factory silo tanks and relationship with viable bacterial content
AUTHOR(S): Grappin, R.; Dromard, T.
CORPORATE SOURCE: Stn. Exp. Lait., Inst. Natl. Rech. Agron., Poligny, Fr.
SOURCE: Kieler Milchwirtschaftliche Forschungsberichte (1982), 34(1), 134-7
CODEN: KMWFAF; ISSN: 0023-1347
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A survey carried out on 163 herd bulk **milks** collected every other day showed significant but low correlations between the standard plate **count** (SPC) and pyruvic acid [127-17-3] or NH3 content. The SPC geometric mean was 1.8 + 105/mL. Reasons for these poor relations are: the large variability of initial levels of pyruvate and NH4+ in individual **milks** as well as in fresh farm **milks**, the influence of **somatic** cells on pyruvate content, and the large variability of the amts. of pyruvate or NH4+ accumulated during storage according to the nature of the bacteria. Although pyruvate and NH4+ tests present several tech. advantages, they cannot be considered as suitable methods for grading farm **milk** supplies according to the current French **milk** payment regulations. Correlation coeffs. were **determined** between SPC and pyruvate or NH4 content of **milk** samples taken in 124 bulk road tankers and 16 silo storage tanks in a factory. In spite of large **vols.** which reduce the original variability of pyruvate and NH4+ and the much higher bacterial **count** (1.8 + 106/mL), the correlations between SPC and pyruvate or NH4+ of bulk tanker **milks** were low. On the silo tank **milks**, with a SPC geometric mean of 2.9 + 106/mL, a better correlation was obtained with NH4+ than with pyruvate. The accuracy of estimation of log SPC is resp. ±0.25 and ±0.19, with 95% confidence limits.

L7 ANSWER 22 OF 25 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1975:108320 HCAPLUS
DOCUMENT NUMBER: 82:108320
TITLE: Use of ion-exchange chromatography in spectral analysis of biological substances
AUTHOR(S): Butko, V. S.
CORPORATE SOURCE: Chit. Med. Inst., Chita, USSR
SOURCE: Mikroelem. Biosfere Ikh Primen. Sel'sk. Khoz. Med. Sib. Dal'nego Vostoka, Dokl. Sib. Konf., 4th (1973), Meeting Date 1972, 498-9. Editor(s): Filippov, V. R. Akad. Nauk SSSR, Buryat. Fil.: Ulan-Ude, USSR.
CODEN: 29PUAQ
DOCUMENT TYPE: Conference

LANGUAGE: Russian

AB A sensitive and uniform method for the **determination** of Mn, Mo, Co, Zn, Cu, Cd, W, Sr, and Pb in 1 sample of different types of **biol. materials** (bone, blood, **milk**, etc.) was developed. A 5-10 g sample of **biol. material** was dried at 60-65° and then ashed at 450-500°. The ash was dissolved in 9M HCl and applied to an Amberlite IRA-400 column. Cations of alkali metals, alkaline earth metals, Ni and Pb, passed through the column. The adsorbed ions were removed with 0.01M HCl. The eluate sample was evaporated to a **volume** of 2-3 drops for spectral anal. in which the mean square error of the **determination** varied from 4.5% for Mo to 9.2% for Pb.

L7 ANSWER 23 OF 25 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1966:95433 HCAPLUS

DOCUMENT NUMBER: 64:95433

ORIGINAL REFERENCE NO.: 64:18020e-h

TITLE: Rapid method for the determination of organic nitrogen and phosphorus based on a single perchloric acid digestion

AUTHOR(S): Galanos, Dimitris S.; Kapoulas, Vassilios M.

CORPORATE SOURCE: Univ. Athens, Greece

SOURCE: Analytica Chimica Acta (1966), 34(3), 360-6
CODEN: ACACAM; ISSN: 0003-2670

DOCUMENT TYPE: Journal

LANGUAGE: English

AB cf. CA 55, 26296g. For microdetns. of N and P in organic and **biol. materials** and compds., place the sample containing 5-15 γ of organic N and P in a borosilicate tube, evaporate the solvent if one is present, add 0.75 ml. of 67-70% $HClO_4$, and drive the cold finger into the tube. Heat at 60-70° for 5 min., continue heating at a moderate temperature until the mixture is colorless or slightly colored, and boil vigorously for 5 min. after the mixture becomes clear. Cool the mixture, remove the tube, rinse the cold finger with H_2O, and dilute to an exact **volume** of 10-12.5 ml. with H_2O. To 4 ml. of the digested solution, slowly add 1 ml. of K_2SO_4-KOH solution (mix 4 **vols**. of 5N KOH with 1 **vol**. of 6N H_2SO_4); pipet 3 ml. of the clear supernatant solution into a tube, add 2 ml. of H_2O and 1 ml. of Nessler reagent, mix, and **measure** the absorbance at 420 (or 500 mμ for the higher N concns.). **Determine** the H_3PO_4 in a 5-ml. aliquot of the sample solution by the method of Bartlett (CA 53, 11499d). Prepare the 1.25% (NH_4 molybdate and the 0.064% 1-amino-2-naphthol-4-sulfonic acid solution as described by Sperry (CA 36, 12643). Prepare standard curves by the same methods, using 10 ml. each of aqueous solns. containing 0-20γ N and P as $(NH_4)_2SO_4$ and Na_2HPO_4. For samples containing 0.1-2.5 mg. N, digest with 1-10 ml. of 67-70% $HClO_4$, dilute the mineralized solution to 25-250 ml. with H_2O; **determine** N in a 5-ml. aliquot without addition of K_2SO_4-KOH solution **Determine** P in a 5-ml. aliquot of the diluted solution after adjusting its pH to 0.7-1.3 with 67-70% $HClO_4$. The results of the N **detns.** by the described method are **quant.** and in agreement with those of the Kjeldahl N **detns.** in 9 **milk** lipid fractions, 5 com. foods and exts., egg yolk lipids, 3 amino acids, **biol. materials**, caffeine, nicotinic acid, 8-quinolinol, and KCN. The results of rapid or slow temperature elevation in digestions of $(NH_4)_2SO_4$ with $HClO_4$ or $HClO_4$ + H_2SO_4, (or with N NaOCl) show that

considerable mech. transfer of NH3 from the HClO4 + H2SO4 digest solution to the "distillate" occurs only when the thermal decomposition of NH4ClO4 proceeds rapidly, owing to the dehydration of HClO4.2H2O by H2SO4.

L7 ANSWER 24 OF 25 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1965:92601 HCAPLUS
DOCUMENT NUMBER: 62:92601
ORIGINAL REFERENCE NO.: 62:16616c-e
TITLE: Flame spectrophotometric determination of strontium in water and biological material
AUTHOR(S): Joensson, G.
CORPORATE SOURCE: Aktiebolaget Atomenergi, Stockholm
SOURCE: (1964), AEC Accession No. 5766, Rept. No. AE-163, 17 pp. Avail.: AEC From: Nucl. Sci. Abstr. 19(4), 652(1965).
DOCUMENT TYPE: Report
LANGUAGE: English
AB A flame spectrophotometric method was developed for the **detn**. of Sr in **biol. material** and water samples. Sr is **determined** in the presence of Ca at a wavelength of 4607 A. The intensity of the Sr emission from the sample is increased if BuOH is added to a solution of the sample in water. With a 6 **volume** % solution of BuOH in water, an optimum intensity of 3.5 times that obtained with pure water solution is obtained. Anions and alkali metals which might interfere with the flame spectrophotometric **determination** are separated from the sample by a simple ion-exchange operation. The method allows **determination** of Sr in solns. down to 0.1 γ/ml. In this case the standard deviation is 3.1% and with a Sr concentration of 1 γ/ml. the deviation is 0.90%. This method has been used for the **detn**. of Sr in samples of varying composition such as bone, meat, and skin from fishes, samples of human bones, shellfish, **milk**, and water, in which case Sr **quantities** of 5 γ were **determined** with an analytical error of less than 5% and Sr **quantities** greater than 10 γ with an error of less than 3%.

L7 ANSWER 25 OF 25 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1918:2950 HCAPLUS
DOCUMENT NUMBER: 12:2950
ORIGINAL REFERENCE NO.: 12:488a-i,489a-h
TITLE: The determination of small amounts of calcium, particularly in blood
AUTHOR(S): Halverson, John O.; Bergeim, Olaf
CORPORATE SOURCE: Jefferson Med. College
SOURCE: Journal of Biological Chemistry (1917), 32, 159-70
CODEN: JBCHA3; ISSN: 0021-9258
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
GI For diagram(s), see printed CA Issue.
AB cf. C. A. 10, 2905. In the method described deproteinization is substituted for ashing and after precipitation from the protein-free liquid the Ca is **determined** by a modification of the KMnO4 titration method. Method for serum, plasma and whole blood: Preserve whole blood with powdered Na citrate to make approx. 1.5%. Add an additional 1% to plasma if it is not to be analyzed at once. The

method as given applies to scrum or plasma; twice the amount of whole blood should be used and the reagents increased proportionally. Pipet 5 cc. (more may be used if the supply is sufficient) of serum or plasma into a 50 cc. volumetric flask containing exactly 20 cc. of H2O. Rinse the pipet by drawing up the solution once. While rotating the flask add from a pipet 5 cc. (1 cc. per cc. of plasma or serum) of 4% Na picrate solution and in the same manner 5 cc. of 1:2 HCl slowly. Heat in a boiling water bath with occasional rotation for 15 min. Cool to a little below room temperature in cold water. Filter through a Ca-free filter paper and allow to drain well. **Measure** an aliquot portion (usually 25 cc.) of the filtrate into a 50 cc. Erlenmeyer flask (Pyrex glass). Neutralize cautiously with concentrated NH4OH added drop by drop from a buret using 2 drops of 0.2 % alizarin indicator solution Titrate back with approx. 0.5 N HCl until faintly acid. Add from a buret 2.5 cc. each of the 0.5 N HCl and of 2.5% (CO2H)2. To the boiling solution add drop by drop in two portions 2.5 cc. of 3% (NH4)2C2O4 solution and digest near the boiling point for 15 min. Cool in ice water to room temperature or lower, add another drop of alizarin and drop by drop from a buret 2.5 cc. of 20% AcONa solution while rotating the flask or if necessary continue the addition until the alizarin just begins to change color. Allow to stand overnight. Transfer to R round-bottom 50-cc. centrifuge tube with the aid of a little H2O and centrifuge for 3 min. at 1,500 r. p. m. With an automatic syphon (described below) draw off the supernatant liquid at first rapidly and then slowly to within a drop or two. Wash with cold distilled H2O (15-20°) first adding about 20 cc. for washing down the sides while rotating the tube. Add more H2O to within 1 .75 cm. of the top of the tube and shake vigorously for 5-10 sec. after placing the metacarpal portion of the hand at the thumb over the mouth of the tube. Centrifuge again. Syphon off to within 1-2 drops. To the precipitate, add with shaking,4cc. of 5% H2SO4 (very faintly tinged with KMnO4). Place in a water bath at 65° until the tube approaches the temperature of the bath. Remove and titrate rapidly with approx. 0.0133 N KMnO4 solution, shaking moderately and using a white background. Use a buret of 10 cc. capacity with which readings to 0.01 cc. can be estimated Take as the end point a faint but definite pink color which persists for at least a min.; the end point will be sharp to 0.01 cc. The H2SO4 must be brought in contact with all parts of the tube as far up as the original solution extended. Correct the buret reading for the amount required to titrate 4 cc. of the H2SO4 to the same end point. 1 cc. of 0.0133 N KMnO4 = 0.267 mg. of Ca. The exact factor for a given solution must be **determined** by standardization. Multiply the cc. used by this factor to obtain the amount of Ca in 25 cc. of filtrate and deduct the blank on the reagents if not negligible. Multiply by 28 to get the mg. of Ca per 100 cc. of serum or plasma. Method for **milk**: For human **milk** dilute 5 cc. with an equal **volume** of H2O and treat 5 cc. of the mixture in exactly the same way as described for serum. For cow **milk** dilute 5 cc. to 50 and use 5 cc. of the mixture for the **determination** Method for cerebrospinal fluid: Treat 10 cc. of spinal fluid in a 25 cc. volumetric flask with 10 cc. of H2O and 1 cc. of Na picrate solution and then add slowly with rotation 1 cc. of concentrated HCl. Make up to the mark, heat in a boiling water bath for 15 min., cool, filter and use an aliquot portion (20 cc.) for the **determination** Method for urine: Where small amts. of urine only are available or where the highest % accuracy is not required the following procedure is recommended: Pipet 10 cc. of urine (in

exceptional cases 20 cc.) into a 50-cc. Erlenmeyer flask (dilute concentrated urines with an equal **volume** of H2O). Follow exactly McCrudden's method (C. A. 6, 236) in precipitating the Ca, merely using correspondingly smaller amts. of reagents. The AcONa should be added with great care. Centrifuge and wash in the manner described for serum. By shaking for 10 min. and allowing to stand for 4 hrs., there is little danger of precipitating uric acid. If uric acid separates, the oxalate may usually be washed out of the flask by small portions of H2O, leaving the much larger and heavier uric acid crysts. behind. **Determination** in the ash from **biological materials**: Dissolve the ash by digesting with dil.HCl for 30 min. Neutralize with NH4OH and precipitate the Ca as usual, using amts. of reagents proportional to the **vols**. of the solns. Reagents: Na picrate: to 40 g. of dry, purified picric acid add a little Ca-free H2O and 10 g. of the highest purity anhydrous Na2CO3 dissolved in 50 cc. of H2O; dilute to 1 l. and shake until the acid is completely dissolved; add concentrated HCl until a slight permanent precipitate of picric acid forms and filter through the highest grade of filter paper. The (CO2H)2 and (NH4)C2O4 solns. should stand overnight and then be filtered. Use the crystallized salt in preparing the 20% AcONa solution and add a little CHCl3 as a preservative. The Na or K citrate (crystallized) should be free from all but the minutest traces of Ca as well as the other chemicals used; ordinary c. p. grades must be recrystd. KMnO4, 0.0133 N. Dissolve 0.5 g. of pure KMnO4 in 1 l. of redistd. H2O in a thoroughly clean flask which has been rinsed with the same H2O. Digest at near the b. p. for 36 hrs., using a funnel covered with a watch glass as a reflux condenser. Cool and allow to stand overnight. Without disturbing the sediment, filter with gentle suction through a 3-in. Buchner funnel lined with ignited asbestos. Rinse the flask and funnel with redistd. H2O. Transfer the solution to a glass-stoppered bottle free from traces of organic matter and keep in a dark place. Standardize the solution against (CO2H)2 (0. 1101 g. pure crysts. in 100 cc. of H2O) or Na2C2O4 of similar strength. To 10 cc. of the oxalate solution (equivalent to 3.5 mg. of Ca) in a 500-cc. Erlenmeyer flask add 10 cc. of 10% H2SO4 very faintly tinged with KMnO4. Place in a water bath at 65° for a few min., remove and titrate at once to a definite pink color which persists for at least a min. If kept in a dark place the strength of the (CO2H)2 does not change appreciably in 10-14 days. The KMnO4 solution will not vary over 0.1% a week , ordinarily but on account of the sensitiveness of the reagent it is desirable to run a check with each series of **detns**. Automatic syphon: An elec. bulb is placed just above the arm A and a black cardboard extending from slightly above A to below D is attached to the right arm of A so as to leave the left arm unhampered. 4-mm. tubing is used. The tip of D is slightly curved, which greatly aids in the removal of the last few drops of liquid without disturbing the precipitate The syphon is filled by opening the upper stopcock and in syphoning the flow is regulated by the lower stopcock. If any trace of precipitate is drawn into D or A it at once becomes visible and by closing the lower and opening the upper stopcock it can be washed back into the tube. In a similar way the syphon may be rinsed and the centrifugates separated **quant**. for further examination The reservoir is filled with redistd. H2O preserved with CHCl3.

(FILE 'MEDLINE, BIOSIS, EMBASE, WPIDS, CONFSCI, SCISEARCH, JICST-EPLUS, JAPIO, CABA, AGRICOLA, VETU, VETB' ENTERED AT 10:27:38

ON 19 NOV 2003)
L11 5833 SEA MILK?(10A)(VOL OR VOLUME)
L12 116 SEA L11(L)((BIOL? OR BIO)(3A)(PARTICLE OR SUBSTANCE OR MATERIAL) OR SOMATIC)
L13 101 SEA L12(L)(ASSESS? OR COUNT? OR QUANT? OR MEAS? OR CALCUL? OR CALC# OR DETERM? OR DET## OR PREDETERM? OR PREDET##)
L14 39 SEA L13(L)(METHOD OR TECHNIQUE OR PROCESS OR PROCEDUR?)

L15 28 DUP REM L14 (11 DUPLICATES REMOVED)

L15 ANSWER 1 OF 28 MEDLINE on STN DUPLICATE 1
ACCESSION NUMBER: 2003184423 MEDLINE
DOCUMENT NUMBER: 22589124 PubMed ID: 12703619
TITLE: Differential leukocyte count method for bovine low somatic cell count milk.
AUTHOR: Dosogne H; Vangroenweghe F; Mehrzad J; Massart-Leen A M; Burvenich C
CORPORATE SOURCE: Ghent University, Faculty of Veterinary Medicine, Department of Physiology, Biochemistry and Biometrics, Salisburylaan 133, 9820 Merelbeke, Belgium.
SOURCE: JOURNAL OF DAIRY SCIENCE, (2003 Mar) 86 (3) 828-34. Journal code: 2985126R. ISSN: 0022-0302.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200305
ENTRY DATE: Entered STN: 20030422
Last Updated on STN: 20030528
Entered Medline: 20030527

AB Whereas many differential leukocyte **count methods** for high **somatic** cell **count** (SCC) milk from mastitic cows are available, only a few have been developed for low SCC milk. We have developed a flow cytometric differential leukocyte **count method** for low SCC milk. The **procedure** consists of 1) 1.5 ml of diluted **milk** sample (30%, **vol/vol** dilution with PBS), 2) centrifugation, 3) leukocyte labeling with SYTO 13 and 4) flow cytometric analysis. Four major leukocyte populations can be clearly identified in the green fluorescence-side scatter dot plot: lymphocytes and monocytes (LM), polymorphonuclear neutrophils (PMN), mature macrophages (Mphi), and cells with apoptotic features based on chromatin condensation and nuclear fragmentation. The optimal processing temperature was 20 degrees C. Significant differences among samples with similar differential leukocyte **counts** were found. Storage of milk samples during 2 d at 7 degrees C had no effect on differential leukocyte **count**. Using the new **method**, differential leukocyte **count** was performed in low SCC milk samples from cows in early, mid, and late lactation. In accordance with previous studies, PMN and Mphi percentages were lower and LM percentages were higher in early lactation than in the other stages of lactation. The percentage of cells with apoptotic features was higher in early lactation than in mid and late lactation. In conclusion, a rapid, simple, accurate, and reproducible standard **procedure** was developed to **determine** the differential leukocyte **count** (Mphi,

PMN, LM, and cells with apoptotic features) of bovine low SCC milk.

L15 ANSWER 2 OF 28 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN
DUPLICATE 2
ACCESSION NUMBER: 2003:318030 SCISEARCH
THE GENUINE ARTICLE: 664HV
TITLE: Management factors associated with the incidence of clinical mastitis over the non-lactation period and bulk tank somatic cell count during the subsequent lactation
AUTHOR: McDougall S (Reprint)
CORPORATE SOURCE: Ctr Anim Hlth, POB 21, Morrinsville, New Zealand (Reprint); Ctr Anim Hlth, Morrinsville, New Zealand
COUNTRY OF AUTHOR: New Zealand
SOURCE: NEW ZEALAND VETERINARY JOURNAL, (APR 2003) Vol. 51, No. 2, pp. 63-72.
Publisher: NEW ZEALAND VETERINARY ASSOC INC, PO BOX 11-212 MANNERS ST, WELLINGTON, NEW ZEALAND.
ISSN: 0048-0169.
DOCUMENT TYPE: Article; Journal
LANGUAGE: English
REFERENCE COUNT: 39

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB AIM: To evaluate associations between management decisions related to the control of mastitis, including the infusion of antibiotics at the end of lactation (dry-cow therapy; DCT), on the incidence of clinical mastitis over the non-lactating period and the bulk tank **somatic** cell **count** (BTSCC) in the subsequent lactation.

METHODS: Dairy herd owners (n=158) provided information via a retrospective survey about (a) the proportion of their herds treated with DCT; (b) DCT management, including: number of occasions on which cows were dried off; manipulation of feed and water intake around drying off; infusion **technique** (partial vs full depth insertion of cannula); and hygiene before and after DCT infusion; (c) occurrence of mastitis and frequency of occurrence following drying off and in the subsequent lactation; (d) number of cows culled for mastitis-related conditions; (e) reasons for culling; (f) incidence of clinical mastitis; and (g) stock purchase policy with regard to mastitis. The BTSCC for each vat of milk supplied for the 1999/2000 and 2000/2001 seasons, and records of antibiotic purchases were collated for each herd.

The probability that >2% of cows within a herd were diagnosed with clinical mastitis over the dry period was initially examined using univariate analysis (i.e. x(2) or logistic regression) and associated factors ($p<0.2$) were offered to a reverse stepwise logistic regression model. Factors hypothesised as being associated with the average lactation logio BTSCC for the 2000/2001 season were initially examined using univariate analysis (i.e. ANOVA or linear regression analysis) and associated factors ($p<0.2$) were then tested using a forward manual model-building approach.

RESULTS: Increasing the percentage of the herd treated with DCT at the end of lactation was associated with reduced probability that >2% of a herd would be diagnosed with clinical mastitis over the non-lactating period and with a lower BTSCC in the subsequent lactation ($p<0.01$). A lower BTSCC was associated with small herds (<150 cows; $p<0.05$), not reducing feed intake around drying off ($p<0.05$), checking for clinical mastitis over the dry period in the

milking parlour rather than at pasture ($p<0.05$), partial insertion of the DCT cannula ($p<0.01$), and use of 'change in udder shape' during lactation as a diagnostic criterion for mastitis ($p<0.05$). The incidence of clinical mastitis over the dry period was positively associated with reduced feeding around drying off ($p=0.05$) and the estimated **volume** of **milk** being produced at the time of drying off ($p=0.014$).

CONCLUSIONS: Use of DCT was associated with fewer cases of clinical mastitis over the non-lactating period and reduced BTSCC over the subsequent lactation. Reduced BTSCC was also associated with smaller herds, use of partial (compared with full depth) insertion of the DCT cannula, not reducing feed intake at the time of drying off, checking for clinical mastitis over the dry (non-lactation) period in the milking parlour, and use of udder shape for diagnosis during lactation. Control of clinical mastitis and BTSCC involves a range of management practices that need to be used in conjunction with DCT.

L15 ANSWER 3 OF 28 CABA COPYRIGHT 2003 CABI on STN
ACCESSION NUMBER: 2000:102497 CABA
DOCUMENT NUMBER: 20000405205
TITLE: Payment systems for ex-farm milk results of IDF questionnaire 2399/A:99 (Study Group A8)
CORPORATE SOURCE: International Dairy Federation
SOURCE: Bulletin of the International Dairy Federation, (2000) No. 348, pp. 15-42. ISSN: 0250-5118
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Data from this survey is presented and discussed. 26 out of a total membership of 36 International Dairy Federation **countries** replied, and 23 pages of the response data are appended. The results are discussed under the following headings: Participation; Price expressions; Component criteria for price **determination**; Hygienic criteria [total bacteria; **somatic** cells]; Production practices [organic milk production; dairy farm assurance programme]; Maximum residue levels; Frequency and **method** of payment; Contracts for national and international markets; Seasonal changes in **volume** delivered; and Seasonal changes in the composition of **milk**. It is concluded that, in general, dairy industries around the world are responsible, and will do what is necessary to ensure that milk and milk products remain healthy and nutritious foods.

L15 ANSWER 4 OF 28 CABA COPYRIGHT 2003 CABI on STN
ACCESSION NUMBER: 2000:130096 CABA
DOCUMENT NUMBER: 20000405938
TITLE: Raw materials: quality and pricing
AUTHOR: Pirisi, A.; Sanna, A.; Caria, A.
CORPORATE SOURCE: Istituto Zootecnico e Caseario per la Sardegna - I-07040 Olmedo, Italy.
SOURCE: Bulletin of the International Dairy Federation, (2000) No. 354, pp. 12-19. Meeting Info.: Development strategy for sheep and goat dairy sector, International Symposium, Nicosia, Cyprus, 13-14 April 2000. ISSN: 0250-5118
DOCUMENT TYPE: Conference Article; Journal

LANGUAGE: English

AB Sheep and goat production in Europe is most common around the Mediterranean basin, particularly in Greece, Spain, France and Italy. Over recent years the tendency has been for a slight reduction in the number of animals bred, while at the same time there has been an increase in the **volume** of **milk** produced. The **milk** of sheep and goats is mainly reserved for cheesemaking and therefore quality evaluation of the milk used as the raw material is of fundamental importance. If, on the one hand, the achievement of a certain level of quality is of interest to the cheesemaking industry, which has to deal with the ever-increasing demands of the consumer, it is also of interest to the milk producers, who can increase their earnings by pursuing high quality. The quality of the milk to be reserved for cheesemaking depends essentially on its physical and chemical composition and on hygienic and sanitary factors (bacterial **count**, **somatic** cell **count**, etc.). The price of sheep and goat milk is generally higher than that of cow milk, even though in certain areas of production it is not specifically exploited, being blended with cow milk for the production of mixed cheeses. Differentiated pricing in relation to quality is becoming ever more widespread for sheep and goat milk as well as for cow milk. This is mainly based on the construction of a grid on which various parameters are taken into consideration in order to establish bonuses and penalties which are then applied to the base price of the milk. This paper presents statistics relative to of sheep and goat production (principal breeds, **quantity** of milk produced, **quantity** and types of cheese produced, etc.). Furthermore, **methods** of checking the quality of the milk, trends in the main parameters of quality over recent years and systems of pricing by quality are outlined. Finally, by way of example, some grid models for the pricing of milk according to quality are shown.

L15 ANSWER 5 OF 28 CABA COPYRIGHT 2003 CABI on STN

ACCESSION NUMBER: 2001:29680 CABA

DOCUMENT NUMBER: 20003016671

TITLE: The incidence of psychrotrophic microorganisms in raw cow milk, and the effect of proteolytic and lipolytic enzymes on technological traits of milk
Vyskyt psychrotrofnich mikroorganismu v syrovem kravskem mlece, vliv proteolytickych a lipolytickych enzymu na technologicke vlastnosti mleka

AUTHOR: Vyletelova, M.; Urbanova, E.; Benda, P.

CORPORATE SOURCE: Vyzkumny Ustav pro Chov Skotu, s.r.o., Rapotin, Czech Republic.

SOURCE: Vyzkum v Chovu Skotu, (2000) Vol. 42, No. 3, pp. 1-10.
ISSN: 0139-7265

DOCUMENT TYPE: Journal

LANGUAGE: Czech

SUMMARY LANGUAGE: English

AB 4754 bulk milk samples were cultured using the plate **method** on agar. Total **counts** of psychrotrophic bacteria (CPP) and of mesophilic bacteria (CPM) were estimated, the correlation between the 2 **counts** ranging from 0.53 to 0.96 in 4 repetitions.

The proteolytic and luteolytic activity was studied on Pseudomonas fluorescens. **Milk** pH, rennetability, rennet traits, butter **milk volume**, acidity titre, alcohol stability, fat percentage, protein percentage, lactose percentage, monohydrate content, **somatic** cell **count**, free fatty acid titre, formol titre, total protein, the CPP and CPM, and proteolytic and lipolytic activity were estimated in raw milk and in inoculated milk, at 6.5 deg C and 14 deg C. The results are given in a series of graphs and tables. Implications for storing milk at different temperatures are discussed.

L15 ANSWER 6 OF 28 CABA COPYRIGHT 2003 CABI on STN
ACCESSION NUMBER: 2000:36932 CABA
DOCUMENT NUMBER: 20000403245
TITLE: Effect of milking conditions on production, fractionation and composition of milk, and health status of udders in Manchega ewes
Efecto de las condiciones de ordeno sobre la produccion, fraccionamiento y composicion de la leche, y estado sanitario de la ubre en ovejas de raza Manchega
AUTHOR: Molina Casanova, A.; Fernandez Martinez, C.; Vergara Perez, H.; Gallego Martinez, L.; Casanova, A. M.; Martinez, C. F.; Perez, H. V.; Martinez, L. G.
CORPORATE SOURCE: Departamento de Ciencia y Tecnologia Agroforestal, Universidad de Castilla-La Mancha, 02071 Albacete, Spain.
SOURCE: Archivos de Zootecnia, (1999) Vol. 48, No. 182, pp. 135-146. 22 ref.
ISSN: 0004-0592
DOCUMENT TYPE: Journal
LANGUAGE: Spanish
SUMMARY LANGUAGE: English
AB This paper reports on the influence of two vacuum levels (VL) and pulsation rates (PR) combinations (A1 = 180 p/m - 34 kPas and B1 = 120 p/m - 40 kPas) in the milking machine on the milking **process** in Manchega ewes. The results showed no effect on total milk yield (A1 = 46.0 litres; B1 = 49.5 litres), or on milk composition (total fat and protein and dry matter). However, a slight increase was observed in the **volume** of **milk** from machine stripping in animals **milked** with a higher vacuum level (B1). The difference was significant both in absolute values (91.8 ml vs. 157.2 ml) and in percentages (16.8 and 23.8%) for A1 and B1 respectively. The health status of the udder was not seem affected by milking conditions. Most individual values were acceptable when using both the California mastitis test (0.28), and the **somatic** cell **count** (log RCS = 4.9).

L15 ANSWER 7 OF 28 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN DUPLICATE 3
ACCESSION NUMBER: 1996:75502 BIOSIS
DOCUMENT NUMBER: PREV199698647637
TITLE: Effect of breed and milking method on somatic cell count, standard plate count and composition of goat milk.
AUTHOR(S): Zeng, S. S. [Reprint author]; Escobar, E. N.
CORPORATE SOURCE: Agric. Res. Extension Programs, P.O. Box 730,

Langston Univ., Langston, OK 73050, USA
SOURCE: Small Ruminant Research, (1996) Vol. 19, No. 2, pp. 169-175.
ISSN: 0921-4488.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 27 Feb 1996
Last Updated on STN: 28 Feb 1996

AB This study was conducted on three commercial dairy goat farms (A, B, C), on which does were milked using pipeline milking machines, milking buckets and by hand, respectively. Six to eight mastitis-free milking does of Alpine and Nubian breeds were selected from each farm. Composite samples, made of equal **volumes** of evening and morning **milk**, were collected monthly throughout the lactation (March-October). Milk samples were analyzed for **somatic** cell **count** (SCC), standard plate **count** (SPC), and percentages of fat, protein, lactose and solids-non-fat (SNF). The overall means were 9.3 times 10-5 SCC ml-1, 9.1 times 10-2 cfu ml-1 SPC, 4.08% fat, 3.20% protein, 4.41% lactose and 8.28% SNF, respectively. There was no significant effect of breed or milking **method** on SCC. Overall monthly mean SCC increased as lactation advanced. During the entire lactation period, 51% of the milk samples contained above 1 million SCC ml-1. However, only traces (under 5 cfu ml-1) of mastitis-related pathogens were found in these high SCC samples. Nubian does produced milk with higher SPC, percent fat, protein and SNF than Alpine does (P lt 0.05). Milk by bucket milking had lower SPC than that by pipeline and hand milkings (P lt 0.05), although all milk samples were below the limits of the Pasteurized Milk Ordinance for Grade A raw milk. Pooled data showed that SCC had a minor but positive correlation with SPC (r = 0.14, P lt 0.05, n = 312).

L15 ANSWER 8 OF 28 CABA COPYRIGHT 2003 CABI on STN

ACCESSION NUMBER: 95:168785 CABA
DOCUMENT NUMBER: 950404958
TITLE: Relationships between herd milk characteristics, rearing methods and farming systems in the Beaufort cheese production area
Relations entre les caracteristiques des laits de troupeaux, les pratiques d'elevage et les systemes d'exploitation dans la zone de production du Beaufort
AUTHOR: Dubeuf, B.
CORPORATE SOURCE: INRA Unite de Recherches sur les Systemes Agraires et le Developpement, Route de Saint-Cyr, 78026 Versailles Cedex, France.
SOURCE: Productions Animales, (1995) Vol. 8, No. 2, pp. 105-116. 39 ref.
ISSN: 0990-0632
DOCUMENT TYPE: Journal
LANGUAGE: French
SUMMARY LANGUAGE: English

AB Relationships between milk quality (divided into 7 types according to milk protein content, milk fat content, **somatic** cell **count** (SCC), total bacterial **count** and monthly- and annual **milk volume**) from 129 dairy farms supplying 2 cooperatives producing Beaufort cheese and rearing

methods based on data for 34 dairy farms were analysed. Chemical composition of milk was affected by calving time and energy content of the diet. Low total protein was associated with winter feeding on a diet with inadequate energy especially at the beginning of lactation. The effect of nutritional- and seasonal factors on fat content was more varied. Bacterial **count** was dependent on hygiene **measures** used for milking equipment and SCC on farming practices such as premilking udder preparation and use of cubicle mats. The relations between milk quality and farming practices indicate the need for proposing quality guidelines adapted to the different rearing **methods** used by dairy farms.

L15 ANSWER 9 OF 28 CABA COPYRIGHT 2003 CABI on STN
ACCESSION NUMBER: 95:187948 CABA
DOCUMENT NUMBER: 950405526
TITLE: End of season milk
AUTHOR: Lacy-Hulbert, S. J.; Woolford, M. W.; Bryant, A. M.; Lomas, J. [EDITOR]
CORPORATE SOURCE: DRC, Hamilton, New Zealand.
SOURCE: Proceedings 47th Ruakura Dairy Farmers' Conference held at Ruakura, New Zealand, 13 June 1995, (1995) pp. 71-77. 8 ref.
Publisher: Communications Group, AgResearch. Ruakura
Meeting Info.: Proceedings 47th Ruakura Dairy Farmers' Conference held at Ruakura, New Zealand, 13 June 1995.
PUB. COUNTRY: New Zealand
DOCUMENT TYPE: Conference Article
LANGUAGE: English
AB In a trial aimed at **determining** the level of milk yield that cows may be milked down to with the milk still remaining acceptable for processing, 42 identical pairs of mixed-parity cows were divided into 4 groups and milked once or twice daily and fed at a high or low level of nutrition for 5 weeks prior to drying-off. Cows fed at a low level yielded 30% less milk than those fed at a high level of nutrition, and cows milked once daily produced 13% less milk at either nutrition level. Daily milk yield/cow ranged from 2.1 to 15.0 litres at drying-off and only 8 quarters developed new intramammary infections. Switching from twice to once daily milking did not significantly affect **somatic** cell **count** (SCC), fat or lactose content of the milk, but resulted in an increase of 5 and 20-30% in total and serum proteins respectively. Results indicated that a low level of nutrition and, to a lesser extent, once daily milking, reduced milk yields to a level that accelerated the involution **process**, and that increases in SCC were due to the concentration effect of reduced **milk volumes**. It is suggested that low-yielding cows be dried off when milk yields have fallen to approximately 5 litres/day.

L15 ANSWER 10 OF 28 CABA COPYRIGHT 2003 CABI on STN
ACCESSION NUMBER: 96:42412 CABA
DOCUMENT NUMBER: 960401069
TITLE: Cold pasteurization of milk. A 'hot' process
La pasteurisation du lait a froid. Un procede "hot"
AUTHOR: Roy, D.

CORPORATE SOURCE: Section Industrie Laitiere, Centre de Recherche et de Developpement sur les Aliments, Agriculture et Agro-Alimentaire Canada, Saint-Hyacinthe, Quebec, Canada.
SOURCE: Producteur de Lait Quebecois, (1995) Vol. 15, No. 10, pp. 22, 24.
ISSN: 0228-1686
DOCUMENT TYPE: Journal
LANGUAGE: French

AB Microfiltration is also known as "cold pasteurization" because, when applied to previously skimmed milk at 50 or 52 deg C, the **process** has the same effect on bacterial numbers as conventional pasteurization at 72 deg C for 6 s. Microfiltration of skim milk through a filter with pores of 1.4 micro m diameter can achieve more than or equal to 99% reduction in the initial bacterial **count**. Skim milk needs to be used because milk fat globules tend to block the pores of membrane filters. Bacteria are trapped in the retentate, which comprises approximately 5% of the initial **volume** of **milk**. This retentate can be re-incorporated into the microfiltrate after pasteurization or UHT treatment. The storage life of milk may be increased by using a combination of microfiltration followed by low temperature pasteurization; this may also result in milk with improved flavour and aroma properties. Microfiltration has a 100% retention rate for **somatic** cells. **Counts** of Listeria and Salmonella spp. may be reduced by 99 and 99.95% respectively by microfiltration. Such reductions are not as effective as those obtained by conventional pasteurization, and therefore it is strongly recommended that drinking milk should still be pasteurized after microfiltration. The use of microfiltration in the treatment of cheese milk is also discussed.

L15 ANSWER 11 OF 28 CABA COPYRIGHT 2003 CABI on STN
ACCESSION NUMBER: 95:88519 CABA
DOCUMENT NUMBER: 950402564
TITLE: New cheesemaking technology
AUTHOR: Golovkov, V. P.; Ozhgikhina, N. N.
CORPORATE SOURCE: VNIIMS, Russia.
SOURCE: Molochnaya Promyshlennost', (1993) No. 5-6, pp. 4-6.
ISSN: 0026-9026
DOCUMENT TYPE: Journal
LANGUAGE: Russian

AB Research carried out as part of a Russian government-sponsored programme aimed at improving the quality of Russian-manufactured cheeses and the efficiency of cheesemaking in Russia is outlined. Designs for cheesemaking systems with higher levels of automation are discussed; trials of experimental models of an automated module for cheese pressing and a vacuum-moulding unit are reported. Industrial trials of an antimycotic preparation, Imbritsin, in 5 cheese factories in Russia and Belarus have proved its effectiveness in preventing the development of moulds (and mycotoxins) during ripening. Studies carried out into the physiological, biochemical and genetic properties of lactic acid bacteria, with a view to obtaining strains with improved properties for cheesemaking, are outlined, including attempts to **determine** optimum conditions for freeze-drying cultures to be used as starters. Production **techniques** and instructions for the preparation

and use of dried nutrient media for use in microbiological testing of cheeses have also been improved. Studies which indicate that 40-90% of toxic heavy metals isolated in milk remained in cheeses after processing are reported; lower levels of these elements remained in soft and brined cheeses than in hard cheeses. Laboratory trials of instruments for the **determination** of fat, moisture and **somatic** cell contents of milk are also outlined, and the basis for the operation of each instrument is described. Finally, the development of **methods** for preparing protein-carbohydrate concentrates from whey, skim milk and buttermilk is discussed. It is concluded that the widespread introduction of such new technology and equipment will result in a 9-11% increase in the **volume** of cheese production (without increasing the **volume** of **milk** used), improved quality of cheeses (with a 10-12% increase in the output of top-quality cheeses), and a 75-80% increase in the degree of mechanization in the Russian cheesemaking industry.

L15 ANSWER 12 OF 28 CABA COPYRIGHT 2003 CABI on STN
ACCESSION NUMBER: 90:89809 CABA
DOCUMENT NUMBER: 900440417
TITLE: Estimation of the bacteriological quality of raw milk using microrespirometry
Estimation de la qualite bacteriologique du lait cru par microrespirometrie
AUTHOR: Rongvaux-Gaida, D.; Peroz, A.; Verdier, B.; Piton, C.
CORPORATE SOURCE: CNRS UA 689 Laboratoire d'Ecologie Generale, Museum National d'Histoire Naturelle, 4 avenue du Petit-Chateau, 91800 Brunoy, France.
SOURCE: Lait (Lyon), (1990) Vol. 70, No. 1, pp. 23-36. 35 ref.
ISSN: 0023-7302
DOCUMENT TYPE: Journal
LANGUAGE: French
SUMMARY LANGUAGE: English

AB A new microrespirometer, based on the **measurement** of consumed oxygen at variable pressure and **volume**, was used to **assess** the bacteriological quality of raw **milk**. In the first part of this work, the **measurement** conditions allowing the estimation of oxygen consumption by bacteria present in raw milk, were established. During incubation at 30 deg C, the initial O2 consumption in a milk sample is essentially due to the respiratory activity of **somatic** cells; this activity decreases and becomes insignificant compared with bacterial activity during the exponential growth phase. With a test sample volume of 100 micro l, the **measuring** conditions are fulfilled for most samples after an incubation period of 4 h at 30 deg C. It was then demonstrated that there was a linear relationship between the log10 number of bacteria and the log10 amount of oxygen consumed (O2(t)) **measured** simultaneously after a 4 h incubation period. The coefficient of correlation obtained on 43 raw milk samples, ranging from 5 x 104 to 5 x 107 c.f.u./ml, was 0.958, with a residual s.d. of 0.225 log10 c.f.u./ml. These results enabled a **method** of predicting the bacterial initial O2 consumption (O2(t0)) to be established from the values obtained during the exponential phase. Therefore, in the second part of this work, 94 samples ranging from 6 x 103 to 107 c.f.u./ml were analysed in

duplicate by the reference **method** and by microrespirometry. The correlation coefficient obtained between the log 10 number of bacteria and the log 10 predicted initial oxygen consumption (O2(t0)) was 0.973 with a residual s.d. of 0.177 log10 c.f.u./ml.

L15 ANSWER 13 OF 28 CABA COPYRIGHT 2003 CABI on STN
ACCESSION NUMBER: 88:79220 CABA
DOCUMENT NUMBER: 880428592
TITLE: A multiple-strain outbreak of Campylobacter enteritis due to consumption of inadequately pasteurized milk
AUTHOR: Birkhead, G.; Vogt, R. L.; Heun, E.; Evelti, C. M.; Patton, C. M.
CORPORATE SOURCE: Epidemiology Div., Vermont Dep. Health, Burlington, VT 05402, USA.
SOURCE: Journal of Infectious Diseases, (1988) Vol. 157, No. 5, pp. 1095-1097. 15 ref.
ISSN: 0022-1899
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A report is given of an outbreak of Campylobacter jejuni enteritis caused by improper operation of a small-**volume** pasteurization unit on a farm supplying **milk** to a boarding school in Vermont, USA. Milk was reportedly heated for 25 min at 135 deg F (57 deg C) rather than 30 min at 145 deg F (63 deg C). Of those replying to a questionnaire, 35% suffered symptoms. It is concluded that the outbreak was milk-borne since those consuming milk had increased risk of illness and a dose-response effect was observed. One cow in the herd had been diagnosed with mastitis and elevated **somatic** cell **counts** showed that the herd had not been in optimal health. Campylobacter was not recovered from milk, but C. jejuni of the same serotypes was cultured from affected people and from the herd. The pasteurization **process** employed was also inadequate. The study highlights the need for adherence to recommended pasteurization **procedures**.

L15 ANSWER 14 OF 28 CABA COPYRIGHT 2003 CABI on STN
ACCESSION NUMBER: 90:126735 CABA
DOCUMENT NUMBER: 900442301
TITLE: Studies on the methylene blue reduction test in raw milk
AUTHOR: Lee, S. J.; Chen, M. C.; Lin, C. W.
CORPORATE SOURCE: Taiwan Livestock Research Institute, Hsinchu Branch Station, Taiwan.
SOURCE: Journal of the Chinese Society of Animal Science, (1988) Vol. 17, No. 3-4, pp. 91-100. 10 ref.
ISSN: 0253-9187
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
SUMMARY LANGUAGE: English
AB The study was designed to investigate the correct examination **method** and factors influencing the methylene blue reduction test. The results showed that the examination of the methylene blue reduction test should be carried out within 24 h of sampling and different tube **volumes** had no effect on the reduction

time. **Milks** were sampled with non-sterilized bottles and standard plate **counts** increased significantly after 48 h storage at 3 deg C storage but the methylene blue reduction time remained constant. During incubation the reduction time was longest in non-inverted tubes, then in those that were inverted every hour, and shortest in those inverted every 20 min., 2 and 5 h resp. Standard plate **counts** in milks increased greatly at 20 deg C and the methylene blue reduction times decreased sharply, but standard plate **counts** increased gradually during storage at 3 deg C and the methylene blue reduction times were 1 h longer than those obtained initially. This indicated that the methylene blue reduction test was sensitive to milk highly contaminated with bacteria. Bulk milk was sampled from dairy farms in Taiwan. No significant correlation was observed between **somatic** cell **count**, standard plate **count**, psychrotrophic bacterial and thermoduric bacterial **counts**, except for thermoduric bacterial and standard plate **count** ($P<0.05$).

L15 ANSWER 15 OF 28 MEDLINE on STN DUPLICATE 4
ACCESSION NUMBER: 87026250 MEDLINE
DOCUMENT NUMBER: 87026250 PubMed ID: 3768145
TITLE: Extraction and determination of adenosine 5'-triphosphate in bovine milk by the firefly luciferase assay.
AUTHOR: Olsson T; Sandstedt K; Holmberg O; Thore A
SOURCE: BIOTECHNOLOGY AND APPLIED BIOCHEMISTRY, (1986 Oct) 8 (5) 361-9.
Journal code: 8609465. ISSN: 0885-4513.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198612
ENTRY DATE: Entered STN: 19900302
Last Updated on STN: 19900302
Entered Medline: 19861210

AB The release of ATP from **somatic** cells in milk with the detergent Triton X-100 was optimized for assay with firefly luciferase. A small **volume** of **milk** (40 microliters) is added to 0.8 ml of 0.2% Triton X-100 in 100 mM Tris, 4 mm EDTA, pH 7.8. After approximately 1 min, 0.2 ml of luciferase reagent is added and the emission of light is **measured** in a luminometer. Results are calibrated with an ATP standard. This single **method** gave high yields of ATP from **somatic** cells in milk without interference from bacterial ATP. Extracts could be stored or transported prior to assay without deterioration of results. A close correlation was found between **somatic** cell **count** and ATP in milk samples collected at a farm as well as in milk samples from a cow with experimental mastitis. Results are promising for future use for diagnosis of mastitis but further work and field testing has to be done before it can be used on a wider scale.

L15 ANSWER 16 OF 28 CABA COPYRIGHT 2003 CABI on STN
ACCESSION NUMBER: 86:48405 CABA
DOCUMENT NUMBER: 860409920
TITLE: Laboratory experiments with a new infrared (IR) milk analyzer, the Milko-Scan 605

AUTHOR: Sjaunja, L. O.; Andersson, I.
CORPORATE SOURCE: Assoc. for Swedish Livestock Breeding & Production, 631 84 Eskilstuna, Sweden.
SOURCE: Acta Agriculturae Scandinavica, (1985) Vol. 35, No. 4, pp. 345-352. 10 ref.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A new single-cell, dual-wavelength IR milk analyser, the Milko-Scan 605 (A/S N. Foss Electric, Denmark), is based on the same principle as the Milko-Scan 100 series but has modifications to the IR detector, optical filter wheel, pump unit and homogenizer, and is supplied with a microprocessor. A number of critical points can be monitored and various possibilities for calibration and calibration control schemes can be pre-programmed. Capacity is 600, 450 or 360 samples/h when analysing at 1, 2 or 3 wavelengths, resp. During a 3-month trial, using bulk milk samples and samples from individual cows, the instrument was evaluated for accuracy, repeatability, influence of temperature and preservative, susceptibility to lipolysis, carry-over effects for different sample **volume**, and interference by various **milk** constituents and physical parameters. The results were compared with those obtained by chemical reference **methods**. Relative accuracies (coefficient of variation of the difference between IR and reference **methods**) were 2.3% for fat (**measured** at 5.7 micro m), 1.4% for fat (3.5 micro m), 1.4% for protein (6.5 micro m) and 1.3% for lactose (9.6 micro m). Estimation of partial coefficient of the multiple linear regression of analysis differences (IR - reference **method**) on different variables showed that variations in pH, **somatic** cell **count**, ash and non-protein N had no significant effects, while f.p. affected only lactose **determination**, but refractive index and citric acid content affected all 4 IR results. [See also DSA 47, 1032-1035.]

L15 ANSWER 17 OF 28 MEDLINE on STN DUPLICATE 5
ACCESSION NUMBER: 84275909 MEDLINE
DOCUMENT NUMBER: 84275909 PubMed ID: 6431677
TITLE: [The congruence and repeatability of electronic determinations of somatic cell counts in milk by diagnostic laboratories].
Shoda a opakovatelnost elektronickeho stanoveni poctu somatickych bunek mleka v diagnostickych laboratorich.
AUTHOR: Blahova I; Rysanek D
SOURCE: VETERINARNI MEDICINA, (1984 May) 29 (5) 257-62.
Journal code: 0063417. ISSN: 0375-8427.
PUB. COUNTRY: Czechoslovakia
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: Czech
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198409
ENTRY DATE: Entered STN: 19900320
Last Updated on STN: 19900320
Entered Medline: 19840919

AB Six joint trials were conducted in six diagnostic laboratories equipped with the Coulter **Counter** Model D electronic computers. The congruence and repeatability of the **determination** of **somatic** cell **counts** in milk were **determined** in these trials. The results were

confronted with similar trials performed in the Netherlands. The average differences in the results of **determinations** performed in the different laboratories exhibited a tendency of improvement as the joint tests proceeded, so that a satisfactory congruence of the results in all laboratories was obtained in the last trial. The standard deviation of the average difference and the average difference between parallel samples were characterized by high variedness . As found, the calibration of the computers by the plateau-and-trough **method** is not satisfactory and should be replaced by the calibration **method** of half the number and by the setting of an equal threshold size of the **counted** cells. The repeatability of **determination** will have to be improved by controlling rationing devices for **milk** dilution and by controlling the standard **volumes counted** by the apparatuses.

L15 ANSWER 18 OF 28 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

ACCESSION NUMBER: 1984:215544 BIOSIS
DOCUMENT NUMBER: PREV198477048528; BA77:48528
TITLE: RELATIONSHIPS OF MILK SOMATIC CELL COUNTS TO DAILY MILK YIELD AND COMPOSITION.
AUTHOR(S): MILLER R H [Reprint author]; EMANUELSSON U; PERSSON E; BROLUND L; PHILIPSSON J; FUNKE H
CORPORATE SOURCE: US DEP AGRIC, BELTSVILLE, MD USA, 20705
SOURCE: Acta Agriculturae Scandinavica, (1983) Vol. 33, No. 3, pp. 209-224.
CODEN: AASCAU. ISSN: 0001-5121.
DOCUMENT TYPE: Article
FILE SEGMENT: BA
LANGUAGE: ENGLISH

AB Data were collected from 29 herds to **assess** the relationship between milk yield and milk SCC [**somatic** cell **count**] in cows with mastitis pathogens present and in those with no bacteria present on test day. Milk and milk component yields declined as milk SCC increased in both SLB [Swedish Friesian] and SRB [Swedish Red] cows. This decline occurred both with bacteria present in the udder and with no bacteria detected. It was also observed in all lactation numbers except SLB 1st lactations with no bacteria present. The decline in yield was curvilinear on the scale of actual milk **somatic** cell concentration. The decline in yield was more severe in SRB than in SLB. Protein percent and fat percent increased with increasing milk SCC in both cow-days with bacteria present and in those without. The increase in protein percent may have been in part due to interference of high SCC and low lactose percent in the indirect protein **determination techniques** used. The increases in both protein and fat percent also may be due to an automatic negative correlation between **milk volume** and percent composition. Lactose percent declined as milk SCC increased; this occurred in both observations with bacteria present and in those with no bacteria. This decline is expected when clinical mastitis is present, but its interpretation when bacteria are absent requires clarification. When quarter foremilk SCC was substituted for bucket milk SCC, similar relationships were found, but differences were smaller. Analyses were conducted substituting total cells in milk for bucket milk SCC. Results were that the yield relationships evident with bucket milk SCC were small or

non-existent for levels of total cells. Relationships with percents protein, fat and lactose were also present for cell number, just as for cell concentration. It is possible to use milk **somatic** cell **count** as a criterion of environmental conditions for milk yield, even among cows in the same herd-year-season. Dairymen should be advised to maintain a low herd average **somatic** cell **count**.

L15 ANSWER 19 OF 28 CABA COPYRIGHT 2003 CABI on STN
ACCESSION NUMBER: 84:149152 CABA
DOCUMENT NUMBER: 842250836
TITLE: Comparison of five diagnostic methods for latent mastitis in dairy cows
AUTHOR: Ye, W. Y.; Wei, L. J.; Liu, S. B.; Tang, Z. N.; Gan, G. G.; Li, T. P.
CORPORATE SOURCE: Guizhou Agric. Coll. Guiyang, Guizhou Prov., China.
SOURCE: Chinese Journal of Veterinary Medicine (Zhongguo Shouyi Zazhi), (1983) Vol. 9, No. 10, pp. 18-20. 3 tabs.
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB Five indirect tests for the diagnosis of latent mastitis in dairy cows were compared with each other and with the conventional direct microscopic **somatic** cell **count** (DMSCC) **method**, on milk samples from 764 quarters of 197 lactating cows. The indirect tests included the plate **milk** agglutination test-whole **milk** (PMGT-WM), mixture of equal **volumes** of distilled water and **milk** (PMGT-DM), the modified Whiteside test (MWT), the modified California mastitis test (MCMT) and the bromothymol blue test (B.T.B.). The MCMT gave the best results, followed by the MWT. It should be noted that the other tests (especially the PMGT-WM and PMGT-DM) were carried out on only 217 quarters, and, hence, their final evaluation would appear to be premature.

L15 ANSWER 20 OF 28 CABA COPYRIGHT 2003 CABI on STN
ACCESSION NUMBER: 84:34265 CABA
DOCUMENT NUMBER: 842232854
TITLE: Somatic cell count in relation to caprine mastitis
AUTHOR: Hinckley, L. S.
CORPORATE SOURCE: Dep. Path. U-193 Univ., Storrs, Connecticut 06268, USA.
SOURCE: Veterinary Medicine & Small Animal Clinician, (1982) Vol. 78, No. 8, pp. 1267-1271. 9 ref.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Milk samples collected from goats soon after kidding and weekly thereafter (group I), and one month after kidding and monthly thereafter (group II), were examined for bacteria, leukocyte **count**, mononuclear cell **count** (MN) and cytoplasmic mass **count** (CM). Several months later blood was collected from group II goats for immunodiffusion tests for caprine arthritis-encephalitis (CAE) antibodies. No goats showed evidence of clinical mastitis or produced abnormal milk during the study. Haemolytic staphylococci were occasionally isolated from group I goats but were never found in conjunction with elevated leukocyte

count. No pathogens were recovered from group II goats. Leukocyte elevation was seen in some goats but was transient and not associated with recovery of pathogens. It was therefore attributed to bruised udders. All goats showed CM and MN cell **counts** of over 1.5 million cells per ml. The highest **counts** were seen close to parturition and in late lactation, and an inverse relationship was found between **volume** of **milk** produced and number of cells present per ml. One of three goats tested was positive for CAE virus. Elevated CM and MN **counts** were responsible for raising the total **somatic** cell **count** above acceptable levels in spite of an acceptably low leukocyte **count.** It is now recognized that **methods** which distinguish nucleated cells must be used to obtain accurate cell **counts** for goats milk.

L15 ANSWER 21 OF 28 CABA COPYRIGHT 2003 CABI on STN
ACCESSION NUMBER: 82:18035 CABA
DOCUMENT NUMBER: 820472519
TITLE: Immunonephelometric assay of immunoglobulin G in cows' milk. II. Detection of colostrum in herd milk
Dosage immunonephelometrique des immunoglobulines G du lait de vache. II. Application a la detection de la presence de colostrum dans les laits de melange
AUTHOR: Joisel, F.; Lannuzel, B.; Lebreton, J. P.; Boutleux, S.; Sauger, F.
CORPORATE SOURCE: UER, Med.-Pharmacie, Univ. de Rouen-Haute-Normandie, Rue T.-Becket, 76130 Mont-Saint-Aignan, France.
SOURCE: Lait, (1981) Vol. 61, No. 609/610, pp. 568-589. 9 ref.
DOCUMENT TYPE: Journal
LANGUAGE: French
SUMMARY LANGUAGE: English
AB This article provides the basis for a statistical **method** for detection of colostrum in herd milk by comparing IgG content with average values. 700 samples of milk and 11 of colostrum were studied qualitatively by breed, lactation number and CMT, and **quantitatively** by milk yield, time since calving, and content of total protein, fat, NaCl, lactose, IgG, bacteria and **somatic** cells. The effects of the other parameters of IgG content (**determined** by immunonephelometric assay) were **determined.** Statistical analysis led to the **determination** of a theoretical **volume**-dependent norm for IgG content of **milk** and a test for comparing IgG content of bulked milk with theoretical norms was established. Specificity of this test was examined and limits of the **method** are discussed.

L15 ANSWER 22 OF 28 CABA COPYRIGHT 2003 CABI on STN
ACCESSION NUMBER: 81:23159 CABA
DOCUMENT NUMBER: 810470299
TITLE: Studies on the milking (cow-machine-man) system from the hygienic point of view
AUTHOR: Matsuura, K.
CORPORATE SOURCE: Vet. Training Cent., Chiba Agric, Insurance Ass., 437 Sueyoshi, Kimitsu-shi, Chiba-ken 232

292-03, Japan.
SOURCE: Bulletin of the Azabu Veterinary College, (1979) Vol. 4, No. 2, pp. 231-249. 93 ref.
DOCUMENT TYPE: Journal
LANGUAGE: Japanese
SUMMARY LANGUAGE: English
AB Relationships among characteristics of milking machines (16), cow's teats (6), operator factors (5) and milk composition and quality (7) were analysed using data from 3 month observations on single cows at 90 farms. Cows ranged in age from 2 to 10 yr and 6 types of bucket milking machine were involved. Multiple correlations milk fat, protein, lactose and Cl- percentage, **somatic** cell **counts**, sp. gr. and milk yield with the 32 variables were 0.55, 0.52, 0.53, 0.55, 0.66, 0.51 and 0.84. Cl- content and **somatic** cell **count** (quality factors) were both positively correlated with teat dimensions; **milk** yield was positively correlated with **milking** rate, and teat **volume** and length. Multiple correlation ratios for **milk** composition and **milk** quality were 0.626 and 0.729 resp. Use of these respective ratios could distinguish 70 or 82% of high yielding cows and 79.3 or 85.7% of low yielders. Principle component analysis using the varimax **method** reduced the 32 variables to 6 main factors - (i) teat dimensions, (ii) vacuum factors, (iii) liner size and milk yield, sp. gr. and cell **count**, (iv) pulsation, cluster weight, stripping yield, liner length and milk tube size, (v) milk composition, (vi) operator factors (milking time, pulsation ratio front:rear teats, liner slip) and milk protein content. The analysis showed that the effect of the cow-machine-man system as a whole on milk quality was much more important than that of any one variable. The interrelation between sub-systems was better analysed using the proximity scale rather than the correlation scale.

L15 ANSWER 23 OF 28 CABA COPYRIGHT 2003 CABI on STN
ACCESSION NUMBER: 78:20605 CABA
DOCUMENT NUMBER: 770442146
TITLE: The effect of somatic cells on the reference method for the determination of "dirt" in milk
AUTHOR: Harding, F.; Morris, J. L.
CORPORATE SOURCE: Tech. Div., Milk Marketing Board, Thames Ditton, Surrey, UK.
SOURCE: (1978) pp. 189-190. 5 ref.
Meeting Info.: XX International Dairy Congress, Vol. E.
DOCUMENT TYPE: Miscellaneous
LANGUAGE: English
AB **Somatic** cells in **milk** make a substantial contribution to the **volume** of moist sediment as **determined** by the Society of Public Analysts' **method**. Solubilization of **somatic** cells with sodium hypochlorite was more satisfactory than flotation of the cells with saturated NaCl for the removal of the cells without affecting the dirt content of milk.

L15 ANSWER 24 OF 28 MEDLINE on STN DUPLICATE 6
ACCESSION NUMBER: 77207592 MEDLINE
DOCUMENT NUMBER: 77207592 PubMed ID: 326826
TITLE: Cell **volume** to aid analysis and

technique of **somatic** cell **counts** in **milk.**
AUTHOR: Sheldrake R F; Hoare R J; Woodhouse V E; McGregor G D
SOURCE: JOURNAL OF DAIRY SCIENCE, (1977 Jun) 60 (6) 882-8. Journal code: 2985126R. ISSN: 0022-0302.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 197708
ENTRY DATE: Entered STN: 19900314
Last Updated on STN: 19900314
Entered Medline: 19770812

AB In conjunction with a Coulter Counter, somatic cells in milk were sized by electronic analysis. Quarter milk from cows with mastitis had a cell volume peak with a modal cell volume of 102 mu3 while milk from healthy quarters had no peak. Bulk milks with a peak had higher cell counts than milks where there was no peak. Dimensions of peak from bulk milks were the same as from quarter milks. Modal cell volume and cell count varied after milks were fixed with varying concentrations and types of fixative. The concentration of fixative recommended by the International Dairy Federation was sufficient, but only marginally so, and it should be increased.

L15 ANSWER 25 OF 28 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN
ACCESSION NUMBER: 77:102283 AGRICOLA
DOCUMENT NUMBER: 77-9070298
TITLE: Cell **volume** to aid analysis and **technique** of **somatic** cell **counts** in **milk**
AUTHOR(S): Sheldrake, R F; Hoare, R J T; Woodhouse, V E; McGregor, G D
AVAILABILITY: DNAL (44.8 J822)
SOURCE: J Dairy Sci, June 1977 Vol. 60, No. 6, pp. 882-888. Ref.
DOCUMENT TYPE: Journal; Article
LANGUAGE: English

L15 ANSWER 26 OF 28 CABA COPYRIGHT 2003 CABI on STN
ACCESSION NUMBER: 77:17970 CABA
DOCUMENT NUMBER: 760429591
TITLE: Enzymic methods for the estimation of the somatic cell count in bovine milk. II. N-acetyl- beta -D-glucosaminidase test for routine estimation of the somatic cell count in milk
AUTHOR: Kitchen, B. J.; Middleton, G.
CORPORATE SOURCE: Otton Madsen Dairy Res. Lab., Dep. of Primary Ind. Hamilton, Brisbane, Australia, 4007.
SOURCE: Journal of Dairy Research, (1976) Vol. 43, No. 3, pp. 491-494. 7 ref.
ISSN: 0022-0299
DOCUMENT TYPE: Journal
LANGUAGE: English
AB In this more detailed account of the test described in DSA 38, 5165,

procedures are given for both (i) **quantitative determination** by means of optical density and (ii) semi-**quantitative determination** from Comparator reading, of N-acetyl- beta -D-glucosaminidase (NAGase) activity. The following correlation coefficient were found: NAGase (i) vs. electronic cell **count** (ECC), 0.91; NAGase (ii) vs. ECC, 0.87; NAGase (i) vs. Wisconsin Mastitis Test (WMT), 0.66; NAGase (ii) vs. WMT, 0.68; ECC vs. WMT, 0.72; and ECC vs. Direct Microscopic **Somatic** Cell **Count**, 0.98. Taking NAGase (i) values of >0.6, NAGase (ii) values of >10 and WMT of >15 as indicative of abnormal milk (equivalent to 0.5 million **somatic** cells/ml), the % of false results in tests on 183, 124 and 183 samples respectively was 9.8, 2.4 and 17.5. The enzyme was not affected by formaldehyde or eosin at concentration used for cell fixation in the ECC test, but was inactivated by K2Cr2O7 and by HgCl2. The test is designed to monitor changes in cell **counts** in the range 250 000-2 million/ml, but since there is a linear relationship ($P < 0.001$) between **count** and **volume** of **milk** used, the cell **count** range can be extended by varying the **volume** of **milk** used. [See DSA 38, 6582 for part I.]

L15 ANSWER 27 OF 28 CABA COPYRIGHT 2003 CABI on STN
ACCESSION NUMBER: 76:17880 CABA
DOCUMENT NUMBER: 750422540
TITLE: A technique for differential somatic cell counts in milk
AUTHOR: Newbould, F. H. S.; International Dairy Federation, Symposium
CORPORATE SOURCE: Univ. of Guelph, Guelph, Ontario, Canada.
SOURCE: Annual Bulletin, International Dairy Federation, (1975) No. 85, pp. 136-141. 1 ref.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Cells **counted** in the Coulter **Counter** model TA were classified by size into 16 channels and recorded in histogram form as % of total cell **volume** Typical histograms were found for **milk** from (i) normal (ii) infected quarters and (iii) colostrum, with (iii) showing a peak at channel 7 and (ii) a peak at channel 8. When this **technique** was applied to herd tank milk, some milk with low **somatic** cell **counts** gave histogram patterns typical of infected quarter milk, whilst some milk with high cell **counts** gave patterns similar to those of normal milk. [See also DSA 37, 8016].

L15 ANSWER 28 OF 28 CABA COPYRIGHT 2003 CABI on STN
ACCESSION NUMBER: 76:19628 CABA
DOCUMENT NUMBER: 760424726
TITLE: The effect of somatic cells on the reference method for the determination of dirt in milk
AUTHOR: Harding, F.; Morris, J. L.; Fryatt, R.
CORPORATE SOURCE: Tech. Div., Milk Marketing Board, Thames Ditton, Surrey, KT7 0EL, UK.
SOURCE: Journal of the Association of Public Analysts, (1975) Vol. 13, No. 4, pp. 125-132. 6 ref.
ISSN: 0004-5780
DOCUMENT TYPE: Journal
LANGUAGE: English

AB 17 samples of milk from individual cows were collected. Subsamples were tested for cell **counts** using the Coulter electronic **counter** and for "sediment" using SPA (Society of Public Analyst) reference **method** [Analyst (1937) 62, 733]. Milks having an average **somatic** cell **count** of 431 500 cells/ml had an average sediment content of 37 ppm. This value dropped to 14 ppm after the sediment had been treated with saturated NaCl (3 washes at least) of sp. gr. 1.18-1.20 at 15.5 deg C to separate **somatic** cells and insoluble milk solids or curdy material from dirt (Tankard flotation **method**). These results do not indicate whether the Tankard **method** differentiates clearly between "dirt" and cells. Milk samples were therefore filtered and the SPA value **measured** and compared with values of samples to which 2 mg standard dirt/l. milk had been added; the sediment values were respectively 5 and 20 ppm, the former showing very little residual dirt after removal of cells. Therefore **somatic** cells (consisting of leucocytes and epithelial cells) in **milk** may make a substantial contribution to the **volume** of moist sediment as **determined** by the SPA **method** and therefore a **method** to distinguish **quantitatively** between **somatic** cells and extraneous dirt is needed.

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FILE 'HOME' ENTERED AT 10:42:34 ON 19 NOV 2003